14(5) SOV/127-59-3-8/22

AUTHORS: Yermolayev, Y.I., Bakaleynik, Ya.M. and Vinogradov, L.V., Engineers.

TITLE: The Semi-Automatic Control of Mechanisms in the Mine Shaft. (Poluavtomaticheskoye upravleniye mekhanizmami shakhtnogo stvola.)

PERIODICAL: Gornyy zhurnal, Nr 3, 1959, pp 31-33 (USSR)

ABSTRACT: An experimental installation for the semi-automatic control of hoising mechanisms in the Kapital'naya Nr 2 pit of the Degtyarka Copper Mine has successfully passed industrial tests. The installation was developed by the KB TsMA (Design Office of Tsvetmetavtomatika) in collaboration with the Degtyarka Mine. The maximum utilization of already existing mechanisms equipped with pneumatic gear was taken into consideration. Air distributing devices VR-350 (figure 1) developed from ENIMS air distributors, are used in the system. Two men in the hoist cage direct different operations in the hoisting shaft. The system is des-

Card 1/2

The Semi-Automatic Control of Mechanisms in the Mine Shaft.

cribed in detail (figure 2). The introduction of this system in the Kapital'naya Nr 1 and Nr 2 pits will permit a reduction of 30 men in the working staff. This represents a yearly saving of 340,000 rubles. There are 2 diagrams.

ASSOCIATION: Tsvetmetavtomatika, Moscow.

YERMOLAYEV, V.I.

Phytoplankton of Lake Krivoye of the Karasuk River system. Trudy TSSBS no.8:82-96 '64. (MIRA 18:7)

L 01293-66 EWT(1) GW
ACCESSION NR: AP5017080 UR/0290/65/000/001/0094/0099
581.526.325

AUTHOR: Yermolayev, V. I. 55

TITLE: Primary production of lakes with lowered water levels in the northern part of the Kulundisk Steppe

SOURCE: AN SSSR. Sibirskoye otdeleniye. Izvestiya. Seriya biologo-meditsinskikh nauk, no. 1, 1965, 94-99

TOPIC TAGS: lake, hydrology, algae, photosynthesis, plant respiration, plant ecology 12,55

ABSTRACT: In 1962 phytoplankton production of Lake Krivoye (Karasuksiy Rayon of Novosibirskaya Oblast') was investigated when its water level was 35 cm below normal, and in 1963 the phytoplankton production of Lake Kusgan (in the same rayon) was investigated when its water level was 45 cm below normal. Phytoplankton production was

cm) and at depths of 1 and 1.6 m 1-3 times a month from June to September. At the same time water samples (0.5 l) were filtered to determine the number of algae colonies and cells and the amount of

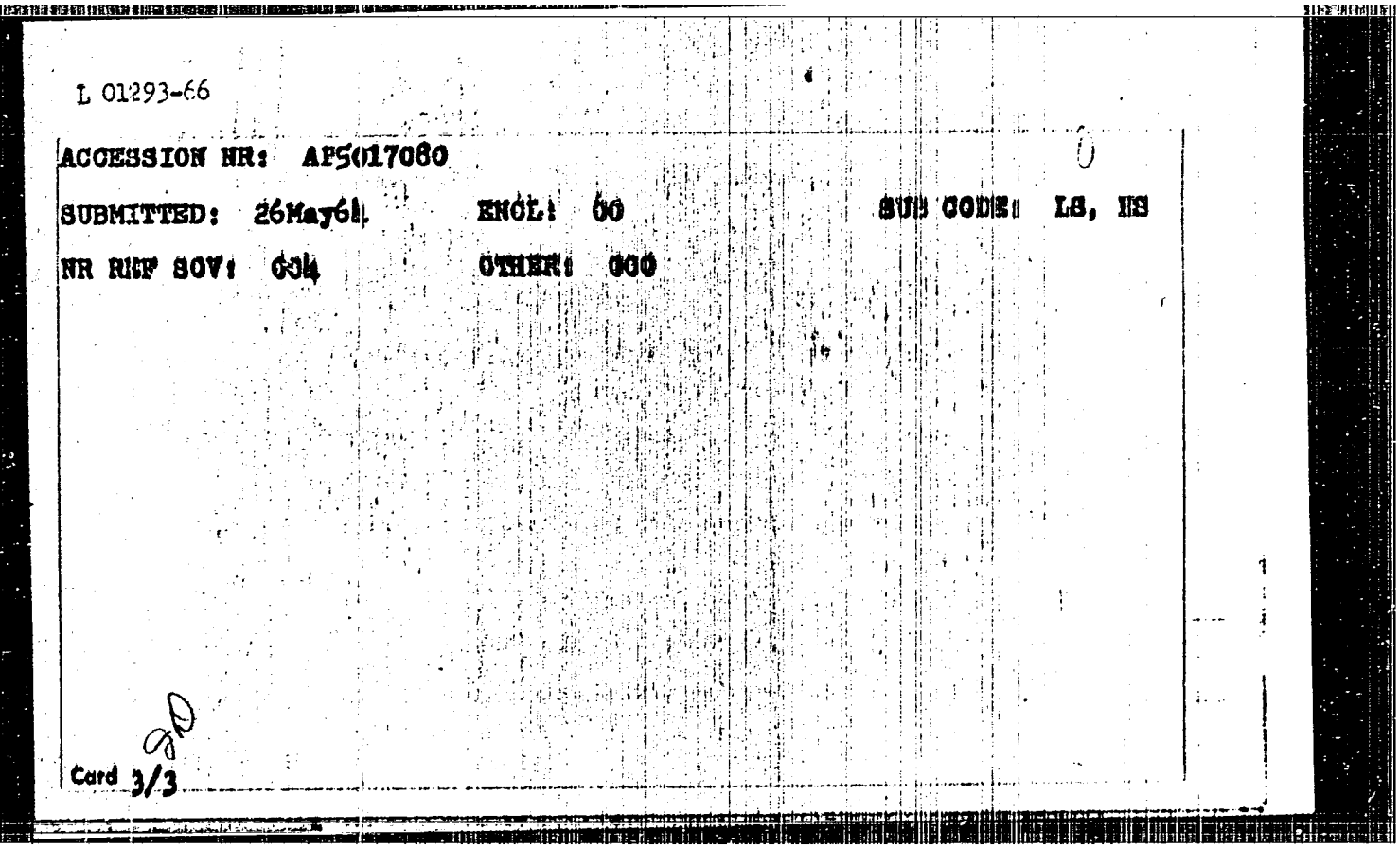
Card 1/3

L 01293-66
ACCESSION NR: AP5017080

phytoplankton biomass. The coefficient of photosynthesis intensity and respiration intensity was determined and the amount of oxygen released per hectare of lake surface at a mean depth of 1.6 m was also determined. Findings show that both lakes at lowered water levels maintained their photosynthetic activity despite a significant level of dissolved salts in the water (1000 to 1296 mg/l). The seasonal oxygen production of Lake Kusgan, which is more shallow and more mineralized than Lake Krivoye, was significantly higher. Both bodies of water are characterized by intense development of blue-green algae during the summer months. As a rule, seasonal changes in phytoplankton production show that with increased numbers of phytoplankton in a given unit of volume, the intensity of its photosynthesis increases. However, no true correlation was established between the values of true phytoplankton photosynthesis (coefficient of photosynthesis intensity and respiration intensity), phytoplankton numbers, and phytoplankton biomass. Orig. art. has: 4 tables.

ASSOCIATION: Tsentral'nyy Sibirskiy botanicheskiy sad Sibirskogo otdeleniya AN SSSR, Novosibirsk (Central Siberian Botanical Garden of the Siberian Branch of AN SSSR)

Card 2/3



L 01293-66

ACCESSION NR: AP5017080

SUBMITTED: 26May64 ENCL: 00 SUB CODE: LS, IE

NR REF SOV: 004 OTHER: 000

Card 3/3

L 4943-66 EWT(1)/EWT(m)/EPF(c)/EWP(t)/EWP(j)/T/EWP(t)/EWP(z)/EWP(b)
ACC NR: AP5025697 IJP(c) JD/RM/JG/ SOURCE CODE: UR/0286/65/000/018/0047/0047

AUTHORS: Artemov, A. N.; Yermolayev, V. I.; Nazarova, R. G.; Pal'chov, G. P.; Razuvayev, O. A.; Solov'yev, I. F.; Solov'yeva, N. A.; Sorokin, V. A.

TITLE: Method for manufacturing film type [redacted]
No. 174697

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 18, 1965, 47

TOPIC TAGS: electric resistor, chromium, nickel

ABSTRACT: This Author Certificate presents a method for manufacturing thin film electrical resistors by vacuum deposition of Cr and Ni onto an insulating base. [illegible] of the metal film to the insulating base and to decrease

dicyclopentadienylcarbonylnickel ($C_5H_5Ni(CO))_2$ in the [illegible]

Card 1/2

UDC: 621.316.849.539.216.2.002.2

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YERMOLAYEV, V.I.

Winter phytoplankton in Lake Krivoye of the Karasuk River system.
Trudy TSSBS no.10:45-49 '65.

Phytoplankton in Lake Studenoye of the Karasuk River System.
Ibid.:50-56 (MIRA 18:10)

30919
S/195/61/002/003/004/009
E030/E452

11.1510

AUTHORS: Molin, Yu.N. and Yermolayev, V.K.

TITLE: The causes of the change in proton relaxation time during irradiation of aqueous solutions

PERIODICAL: Kinetika i kataliz, v.2, no.3, 1961, 358-361

TEXT: Hitherto the decrease in relaxation times have been attributed to the formation of free radicals, but calculation shows that improbably high concentrations, 10^{17} to 10^{18} g^{-1} would be necessary to give the size of effect observed. The present work therefore resolves this question by irradiating solutions of hydrogen peroxide and also distilled water, hexane, benzene and solutions of benzoyl peroxide in benzene, and aqueous solutions close in concentration to those used previously by V.M.Vdovenko and V.A.Shcherbakov (Ref.2: Dokl. AN SSSR, v.127, 127, 1959), and observing simultaneously the NMR signal and also the EPR signal, the latter indicating the formation of any paramagnetic bodies, including free radicals. The apparatus consists of an EPR magnet, with a hole drilled through one pole, to admit a beam of fast (1.6 MeV) electrons. The specimen is held in a glass ampule, diameter 7 mm and volume 0.25 cm^3, which is located close to the

Card 1/3

opposite pole to minimize the field inhomogeneity due to the hole. The NMR field coils are wound on a former which slides over the ampule. The NMR signal is calibrated with standard $CuSO_4$ solutions with Cu^{++} concentrations of $\sim 10^{17}$ cm^{-3}; the sensitivity is rather less than in previous work because of the increased field inhomogeneity. The specimen of 30% stabilized impurified H_2O_2 was irradiated at 6×10^4 rad/sec and after 2 min the amplitude of NMR signal, which had increased rapidly within seconds, reached a high steady value, equivalent to 4×10^{19} ions Cu^{++} cm^{-3}. On removal of the irradiation, the signal fell over some 30 min to about one third this value and then appeared constant. It was remarkable that all this time there was no observable change in the EPR signal, thus precluding the formation of a significant concentration of free radicals. Similar results were not obtained with the other solutions. The only plausible explanation of the results is that the relaxation time is decreased by supersaturation into free oxygen, which is known to be formed on irradiation of hydrogen peroxide; this is confirmed by the lack of signal in the other solutions indicating that not more than about 10^{17} cm^{-3} free radicals could remain undetected, and by the failure of the signal to revert to its initial small value in H_2O_2, as should have

occurred if formation of free radicals were the operative mechanism. Acknowledgments are expressed to V.V.Voyevodskiy and N.Ya.Buben for their interest in the work. There are 2 figures and 9 references: 6 Soviet and 3 non-Soviet. The references to three English language publications read as follows:
Ref.1: W.T.Duffy, Bull. Amer. Phys. Soc., II, v.4, 250, 1958;
Ref.8: J.G.Marshall, P.V.Rutledge, Nature, v.184, 2013, 1960;
Ref.9: G.Chiarotti, L.Guilotto, Phys. Rev., v.93, 1241, 1954.

ASSOCIATIONS: Institut khimicheskoy fiziki AN SSSR
(Institute of Chemical Physics AS USSR)
Institut khimicheskoy kinetiki i goreniya SO AN SSSR
(Institute of Chemical Kinetics and Combustion SO AS USSR)

SUBMITTED: October 31, 1961

35062
S/195/62/003/001/003/010
E071/E136

11.1510

AUTHORS: Yermolayev, V.K., Molin, Yu.N., and Buben, N.Ya.

TITLE: Recombination of radicals in solid organic substances. I. Investigation by the method of fusion

PERIODICAL: Kinetika i kataliz, v.3, no.1, 1962, 58-64

TEXT: The range of temperatures at which recombination of radicals takes place on fusion of various organic substances, irradiated with fast electrons, was studied by the ЭПР (EPR) method. The object of this work was to determine the molecular movements leading to the recombination of radicals in a solid. For this reason the substances investigated had a known phase behaviour on heating. Normal alcohols, ketones, hydrocarbons, aromatic compounds etc. were investigated. To determine the stability of radicals at various temperatures, fusion curves were obtained. For this purpose a substance was irradiated at a sufficiently low temperature T_o in a stream of fast electrons to obtain a concentration n_o of radicals. The irradiation was stopped at the beginning of the linear part of the curve of accumulation of radicals ($n_o \approx 10^{19}$ radicals/g).

Card 1/3

The temperature T_o was so chosen that during 10-15 minutes no noticeable decrease in the concentration of radicals occurred. The substance was then heated for 2 minutes at a temperature $T_1 > T_o$, cooled to T_o and the concentration of radicals n_1 measured etc. The dependence n_i (T_i) was called the fusion curve. It was established that for crystalline substances (substances of type I) a rapid recombination of radicals occurs, as a rule, before melting; for amorphous substances the process takes place near the divitrification temperature. For cyclopentane and cyclohexene (type II), radicals recombine near the temperature of their polymorphic transformation. For hexamethylbenzene, acetone, succinic acid (type III) several ranges of recombination of radicals can be separated. In the majority of cases the recombination of radicals is, apparently, caused by self diffusion, appearing close to the temperature of a phase change. For substances of type III the recombination of radicals takes place at a temperature at which the self diffusion of molecules is apparently absent, e.g. in hexamethylbenzene and acetone, radicals recombine partially in the region at which

the molecules begin to rotate. The recombination of radicals in the absence of self diffusion could be explained by the formation of radicals close to each other, e.g. on the neighbouring molecules in pairs. Then initiation of any molecular movement may lead to their recombination. However, the formation of radicals on neighbouring molecules should be accompanied by a strong widening of components of the superfine structure of the EPR spectra, much higher than was actually observed.

The authors thank V.V. Voyevodskiy and G.K. Voronova for their assistance. Part of the material of the present paper was presented at the Second All-Union Conference on Radiation Chemistry. There are 5 figures.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR
(Institute of Chemical Physics, AS USSR)
Institut khimicheskoy kinetiki i goreniya SO AN SSSR
(Institute of Chemical Kinetics and Combustion SO AS USSR)

SUBMITTED: August 14, 1961

43236
S/844/62/000/000/056/129
D204/D307

AUTHORS: Yermolayev, V. K., Molin, Yu. N. and Buben, N. Ya.

TITLE: Recombination of radicals in some frozen organic compounds

SOURCE: Trudy II Vsesoyuznogo soveshchaniya po radiatsionnoy khimii. Ed. by L. S. Polak. Moscow, Izd-vo AN SSSR, 1962, 331-334

TEXT: The present work was aimed at a study of the molecular motions occurring during the recombination of radicals formed under the action of fast electrons at a temperature T_0, such that n_0, the number of radicals formed, remains fairly constant over 10 - 15 min. The compounds were then warmed up to a series of temperatures T_i (where $T_i > T_0$), maintained at T_i for 2 min and cooled back to T_0, at which temperature the remaining concentrations of radicals, n_i, were measured. In cystalline compounds, such as MeOH, C_6H_6 or n-octanol, the radicals disappeared at 0.9 - 1.0 T_m (where T_m =

Card 1/3

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D204/D307

m.p.), whilst in poorly crystallizing substances, such as glycerol or n-butanol, the recombination took place in the region of vitrification (0.6 - 0.7 T_m). This rule was confirmed on slowly frozen (crystalline) and quenched (amorphous) 1,1-dicyclohexyldodecane; cooling at an intermediate rate gave rise to (n_i/n_o) versus $(\frac{T}{T_m})$ plots of an intermediate character, showing the presence of crystallites of varying temperature stability. Such intermediate type curves were the only ones observed for paraffin, polyethylene and polypropylene. The recombination is connected with partial destruction of the lattice and amorphous compounds respectively. In cyclopentane and cyclohexane, in which molecular rotation begins at T_{rot} ($T_{rot} \ll T_m$), it was found that recombination of the radicals took place at T_{rot}, showing that the radicals are probably formed in pairs and recombine as soon as rotation becomes possible. The assistance of V. V. Voyevodskiy and G. K. Voronova is acknowledged. There are 4 figures.

Recombination of radicals ...

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics, AS USSR); Institut khimicheskoy kinetiki i goreniya SO AN SSSR (Institute of Chemical Kinetics and Combustion, Siberian Branch of the AS USSR)

Card 3/3

YERMOLAYEV, V. L.

PA 175T77

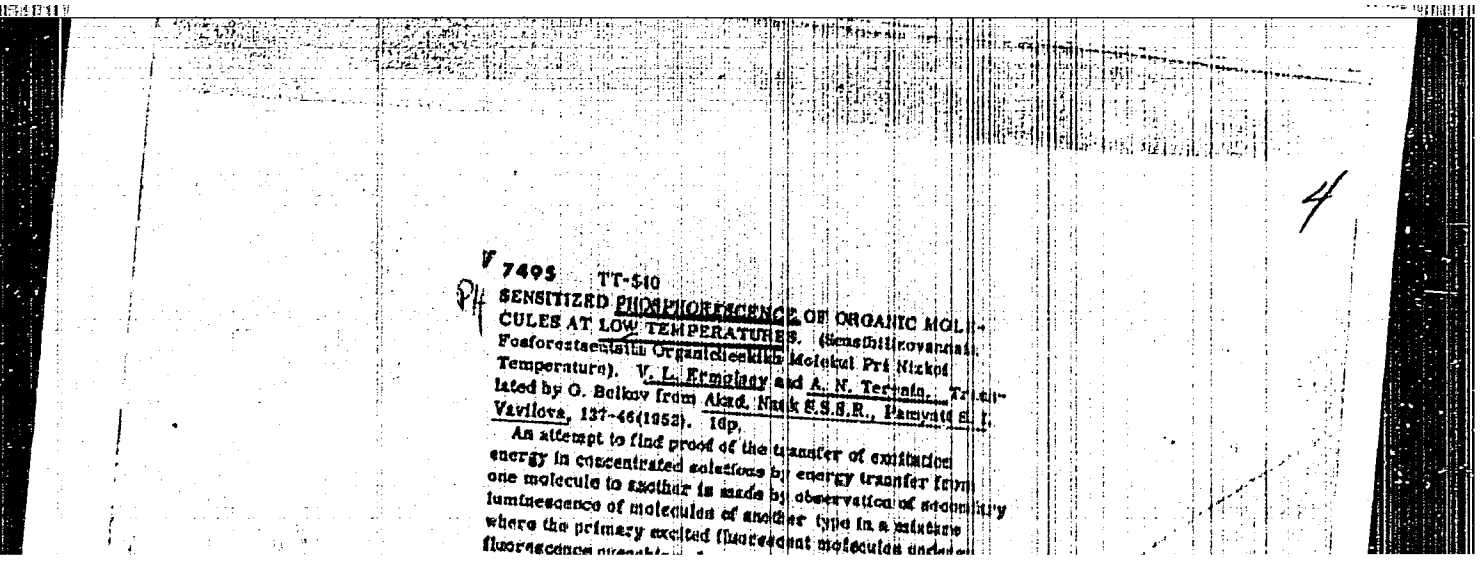
USSR/Physics - Phosphorescence 1 Apr 50

"Polarization of Phosphorescence of Organoluminophors at Temperatures of Liquid Air," B. Ya. Sveshnikov, V. L. Yermolayev

"Dok Ak Nauk SSSR" Vol LXXI, No 4, pp 647-650

Studies variation in deg of polarization (g/cu cm) of phosphorescence of alc soln of triphaflavin, etc., at temp of liquid air in dependence upon concn of activator (p in %) also upon time of extinguishing (t in sec) and for various wave lengths of exciting light (436, 366, 313 millimicrons). Submitted 2 Feb 50 by Acad S. I. Vavilov.

175T77

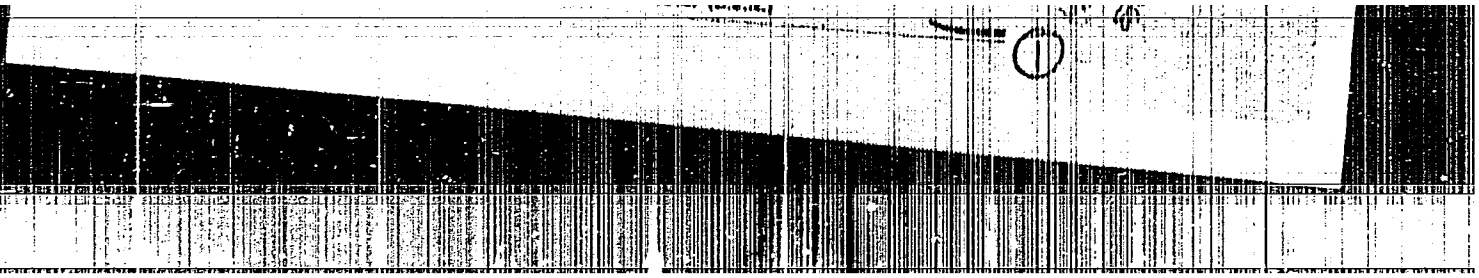


4

V 7495 TT-540

SENSITIZED PHOSPHORESCENCE OF ORGANIC MOLECULES AT LOW TEMPERATURES. (Sensibilizovannaia Fosforestsentsiia Organicheskikh Molekul Pri Nizkoi Temperature). V. L. Ermolaev and A. N. Terenin. Translated by O. Belkov from Akad. Nauk S.S.S.R., Pamyati S. I. Vavilova, 137-46(1952). 1dp.

An attempt to find proof of the transfer of excitation energy in concentrated solutions by energy transfer from one molecule to another is made by observation of sensitized luminescence of molecules of another type in a mixture where the primary excited fluorescent molecules undergo fluorescence quenching.



APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001962810020-2"

USSR/Physics - Phosphorescence Sensiti- 21 Jul 52
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235T92

"Sensitization of Phosphorescence of Organic Molecules at Low Temperatures: Intermolecular Transfer of Energy With Excitation of the Triplet Level," Acad A. N. Terenin, V. L. Yermolayev

"Dok Ak Nauk SSSR" Vol 85, No 3, pp 547-550

Discusses investigations devoted to the problem of transfer of excitation energy in solns of mixts of fluorescing aromatic mols at temp of liquid air, for the purpose of establishing the phenomenon of sensitization of excitation by one compd of the

235T92

Phosphorescence spectrum of another compd, denoted by A+B. Gives tables and graphs of intensity of sensitized phosphorescence of various compds in dependence on concn of another. Submitted 3 May 52.

235T92

USSR/ Physics

Card 1/1 Pub. 22 - 19/54

Authors : Yermolayev, V. L.

Title : Extinguishing and changing the time of luminescence during sensitized phosphorescence of aromatic compounds

Periodical : Dok. AN SSSR 102/5, 925-928, June 11, 1955

Abstract : An experimental study was conducted of the mechanism of sensitized phosphorescence and the determination of time (τ) the luminescence of an [illegible]

Institution : .....

Presented by : Academician A. N. Terenin, December 2, 1954

[illegible] Tables; graphs.

TERENIN, A.N.; YERMOLAYEV, V.L.

Intermolecular transfer of energy occurring in sensitized luminescence. Izv. AN SSSR. Ser.fiz. 20 no.4:382 Ap '56. (MLRA 10:1)
(Luminescence) (Fluorescence)

Yermolayev VL

USSR/Optics - Physical Optics

K-5

Abs Jour : Referat Zhur - Fizika, No 5, 1957, 12962

Author : Yermolayev, V.L.

Inst :

Title : Sensitized Phosphorescence of Aromatic Compounds (Energy Transfer from Triplet to Triplet Level).

Orig Pub : Izv. AN SSSR, ser. fiz., 1956, 20, No 5, 514-519

Abstract : A quantitative investigation was made of the phenomenon of sensitization of phosphorescence, connected with radiationless migration of the energy of electron excitation between the molecules, with the excitation of the triplet level. For more details see Abstract 12961.

Card 1/1

TERMOLAYEV, V. L.

USSR/Physics - Luminescence

Card 1/1 Pub. 118 - 2/7

Authors : Terenin, A. N., and Yermolayev, V. L.

Title : Intermolecular transfer of energy in the phenomenon of sensitized luminescence of organic systems (part II)

Periodical : Usp. Fiz. nauk, 58/1, 37-68, Jan 1956

Abstract : The intermolecular transfer of energy observed in the phenomenon known as the sensitization of luminescence of organic systems is discussed. Two types of energy transfer are considered: kinetic and inductive. Various cases are analyzed in which sensitized luminescence and the energy transfer were observed. Fifty-seven references: 8 Germ., 21 USA, 28 USSR (1927-1955). Graphs; diagrams.

Institution : .....

Submitted : .....

YERMOLAYEV, V.I., KRYUCHKOV, V.V., SMEKALOV, M.M.

Modern signaling, central control and block system equipment used in underground electromotive transport. Priborostroenie no.12:2-5 D '56. (MLRA 10:1)
(Subways--Signaling) (Automatic control)

AUTHORS: Dmitriyevskiy, O. D., Yermolayev, V. L. 20-114-4-20/63
Terenin, A. N., Member of the Academy

TITLE: Direct Measurement of the Life of Excited Molecules of Chlorophyll and Analogous Pigments in Different Media (Pryamyye izmereniya vremeni zhizni vozbuzhdennykh molekul khlorofilla i analogichnykh pigmentov v razlichnykh sredakh)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 114, Nr 4, pp. 751-753 (USSR)

ABSTRACT: In order to determine this life τ the authors measured the duration of fluorescence by means of the phase fluorimeter by A. M. Bonch-Bruyevich et al. whose resolving power in time is 2.10^{-11} sec. Other devices used in these investigations and the errors of measurement are also shortly discussed. Fluorescence was excited by the mercury line 436 mμ. Observation was effected through the light filter KC-10 with a thickness of 4 mm. The concentration of the solutions always remained below 10^{-5} mol/l. The values obtained for the solutions of chlorophyll and related pigments in various solvents at + 20°C are summarized in a table. The here measured life of the excited singlet state of chlorophyll markedly differs from those values which were obtained by indirect methods from the polarization

Card 1/2

Direct Measurement of the Life of Excited Molecules of Chlorophyll and Analogous Pigments in Different Media 2c 114-4-20/63

of the fluorescence and from the integral of the absorption band. The decay time of the fluorescence of the pigments depends only little on the solvent. For chlorophyll by it is approximately twice as small as for chlorophyll a, which is connected with the different quantitative yield of fluorescence. In phtalocyanides life is somewhat longer than in pheophitines of the corresponding metals. Hematoporphinin has the longest decay time. If a Zn-atom is introduced into the pigment instead of a Mg-atom, the decay time of the fluorescence is reduced to about half of its former length. A table contains the here obtained data on the decay time of the fluorescence of chlorophyll in natural media. The values thus obtained are about 3-8 times as short as in molecular solutions. In the living leaf τ depends on the intensity of exposure to light. The reduction of τ and the reduction of fluorescence yield in the living leaf are largely due to the high concentration of pigments under these conditions. There are 2 tables and 6 references, 1 of which is Soviet.

SUBMITTED: May 31, 1957

Card 2/2

YERMOLAYEV, V.L.; ALESHIN, V.G.; SAYENKO, Ye.A.

Determining the velocity constants of energy transfer in chelate complexes of rare earth ions. Dokl. AN SSSR 165 no.5:1048-1051 D '65. (MIRA 19:1)

1. Submitted April 26, 1965.

YERMOLAYEV, V.L., Cand Phys-Math Sci--(diss) "Sensitized phosphorescence of organic compounds at low temperature." [Len], 1958. 10 pp (State Order of Lenin Optical Inst im S.I.Vavilov), 150 copies (KL,47-58,129)

YERMOLAYEV, V.L.; KOTLYAR, I.P.; SVITASHEV, K.K.

Internal conversion from the fluorescent to the phosphorescent level in naphthalene derivatives. Izv.AN SSSR.Ser.fiz. 24 no.5:492-495 My '60. (MIRA 13:5)
(Naphthalene--Optical properties) (Luminescence)

24(4) SOV/51-6-5-14/34

AUTHOR: Yermolayev, V.L.

TITLE: Dependence of the Probability of Energy Transfer in Sensitized Phosphorescence on the Oscillator Strength of a Triplet-Singlet Transition in the Molecule of an Energy Acceptor (Zavisimost' veroyatnosti perenosa energii pri sensibilizovannoy fosforestsentsii ot sily ostsillyatora triplet-singuletnogo perekhoda v molekule aktseptora energii)

PERIODICAL: Optika i Spektroskopiya, 1959, Vol 6, Nr 5, pp 642-647 (USSR)

ABSTRACT: The paper was presented at the Sixth Conference on Luminescence, Leningrad, 1958. In 1952 Terenin and the author (Refs 1, 2) discovered sensitized phosphorescence of aromatic compounds. Later (Refs 3-5) it was found that a resonance transfer of energy with direct excitation of a triplet level in the energy acceptor takes place in sensitized phosphorescence. The present paper describes studies of the effect of the oscillator strength of triplet-singlet transitions in the energy acceptor on the probability of energy transfer and consequent quenching. For this purpose acceptors with similar phosphorescence spectra and widely differing decay constants were used. They were: naphthalene, 1-chloronaphthalene, 1-bromonaphthalene and 1-iodonaphthalene. Their

Card 1/4

Dependence of the Probability of Energy Transfer in Sensitized Phosphorescence on the Oscillator Strength of a Triplet-Singlet Transition in the Molecule of an Energy Acceptor

phosphorescent properties are listed in Table 1: the height of the triplet level, in cm^{-1}, is given in col 2; the decay constant, in sec, is given in col 3; the quantum yield is given in col 4. Experiments showed that phosphorescence of benzophenone or benzaldehyde was quenched to the same extent by any one of the four acceptors listed above (at the same acceptor concentration of 0.32 mole/litre at -195°C, see Table 2). This is shown clearly in Fig 1 where the continuous curve represents quenching (lowering of intensity of phosphorescence) of benzophenone by naphthalene (circles) and 1-bromonaphthalene (crosses) as a function of the acceptor concentration. Although the oscillator strengths of the triplet-singlet transitions in naphthalene and 1-bromonaphthalene differ by a factor of about 100 their quenching action is represented by the same curve. This is also true of the decrease of the phosphorescence decay constant τ, due to naphthalene and 1-bromonaphthalene in benzophenone. The effect on τ is represented by the dashed curve in Fig 1: the effect of naphthalene is shown by dots and that of 1-bromonaphthalene by triangles. These facts contradict directly one variant of the theory of radiationless energy transfer (Galanin, Förster, Dexter). This variant predicts

Dependence of the Probability of Energy Transfer in Sensitized Phosphorescence on the Oscillator Strength of a Triplet-Singlet Transition in the Molecule or an Energy Acceptor

strong dependence of the probability of energy transfer between donors and acceptors (and the consequent quenching of the donor phosphorescence) on the probability of radiative transitions (oscillator strengths) in the acceptor. It was also found that the quantum yield of sensitized phosphorescence (defined as the ratio of I_A, the number of quanta emitted by the acceptor, to I_D, the number of quanta emitted by the donor) increases more slowly along the acceptor series from napnthalene to 1-iodonaphthalene than predicted by the theory mentioned above (Fig 2). The several predictions mentioned above stem from an assumption that energy is transferred by an inductive interaction of electromagnetic fields of the molecules taking part in the transfer process. Consequently this mechanism must be abandoned in favour of another variant which ascribes energy transfer to exchange-resonance effects which explain satisfactorily the observed facts. Acknowledgments are made to

Dependence of the Probability of Energy Transfer in Sensitized Phosphorescence on the Oscillator Strength of a Triplet-Singlet Transition in the Molecule of an Energy Acceptor

Academician A.N. Terenin who suggested the work and directed it.
There are 2 figures, 3 tables and 28 references, 16 of which are Soviet, 4 French, 4 German and 4 English.

SUBMITTED: July 20, 1958

S/053/60/071/01/05/011
B006/B011

24.3500

AUTHORS: Yermolayev, V. L., Terenin, A. N.

TITLE: Intramolecular Energy Transfer on Triplet Levels

PERIODICAL: Uspekhi fizicheskikh nauk, 1960, Vol. 71, No. 1, pp. 137-141

TEXT: The present paper is a continuation of a number of previous investigations (Refs. 1-7), that had dealt with similar problems. It was the aim of the investigation under review to show that an intramolecular energy transfer from the triplet level of a carbonyl group to a triplet level of diphenyl- or naphthyl group is possible. For this purpose, the authors investigated the spectra and the duration of phosphorescence in a series of diphenyl ketones, naphthyl ketones, and aldehydes. The clearest results were obtained with phenyl-4-diphenyl ketone (phenyl-4-benzophenone), the absorption spectrum of which at -196°C in ethanol ether (mixture 2:1) is shown in Fig. 1. The benzophenone spectrum taken under the same conditions, is also shown for a comparison. Phenyl diphenyl ketone exhibits two bands; a scheme of the electron level of this compound is shown in Fig. 3. Numerous details are given, concerning the spectra that were

Card 1/2

Intramolecular Energy Transfer on Triplet Levels

S/053/60/071/01/05/011
B006/B011

examined. Fig. 2 shows the phosphorescence spectra of benzophenone, phenyl-4-diphenyl ketone and p-oxydiphenyl in ether, taken under the same conditions as the absorption bands. The duration of phosphorescence of these three compounds was $4.7 \cdot 10^{-3}$ sec, 0.3 sec, and 2.5 sec, respectively. Table 1 contains data on phenyl diphenyl ketone and a number of other carbonyl derivatives of diphenyl, concerning the position of singlet- and triplet level, extinction period, and phosphorescence quantum yield. Three of the compounds investigated were synthesized by I. Ya. Postovskiy. Table 2 offers the same data for some carbonyl derivatives of naphthalene, Fig. 4 shows the phosphorescence spectra of 1-chloronaphthalene, and 2-naphthyl methyl ketone. All data and all spectra refer to mixtures with ethanol ether at -196°C. Investigations show that the luminescence of carbonyl derivatives of diphenyl and naphthalene can be ascribed to an intramolecular excitation energy transfer. This explains the lack of fluorescence in these compounds. The naphthalene derivatives were prepared by A. I. Shattenshteyn, V. K. Matveyev, and A. T. Troshchenko. There are 4 figures, 2 tables, and 10 Soviet references.

Card 2/2

YERMOLAYEV, V.L.

Luminescence of simple benzene derivatives. Part 1. Aromatic amines. Opt.i spektr. 11 no.4:492-497 O '61. (MIRA 14:10)
(Benzene derivatives—Spectra)

YERMOLAYEV, V.L.

Spheres of action of quenching in the case of energy transfer between triplet levels. Dokl. AN SSSR 139 no.2:348-350 Jl '61. (MIRA 14:7)

1. Predstavleno akademikom A.N. Terenin'ym.
(Phosphorescence) (Nuclei, Atomic)

S/051/62/013/001/006/019
E039/E420

AUTHOR: Yermolayev, V.L.

TITLE: Measurement of the quantum yields of sensitized phosphorescence as a method of studying quenching processes at the triplet level of organic molecules

PERIODICAL: Optika i spektroskopiya, v.13, no.1, 1962, 90-95

TEXT: The quantum yields of sensitized and normal phosphorescence are measured for a series of aromatic molecules in solid solution at 77°K. It is shown that the quantum yields of sensitized phosphorescence for all the investigated combinations is independent of the concentration of acceptor and donor energies. Results obtained are explained on the assumption that the non-radiating transfer of energy up to the triplet level is accompanied by quenching and that all the quenching inside aromatic molecules in solid solution is concentrated in the triplet state. Measurements of quantum yield of sensitized phosphorescence are able to be used to determine quenching in triplet levels of donor or acceptor energy. Quantum yields are determined for values of acceptor energy
Card 1/2

S/051/62/013/001/006/019
E039/E420

Measurement of the quantum ...

concentrations of 6.3×10^{-2} to 4.8×10^{-1} mole/litre. A minimum quantum yield of 0.070 is observed for carbazole + naphthalene and a maximum quantum yield of 0.73 for phenanthrene + 1-chloro-naphthalene. There are 1 figure and 3 tables.

SUBMITTED: May 25, 1961

Card 2/2

TERENIN, A.N.; YERMOLAYEV, V.L.

Inactivation of the triplet state in aromatic molecules.
Izv. AN SSSR. Ser. fiz. 26 no.1:21-29 Ja '62. (MIRA 15:2)
(Aromatic compounds)
(Molecular dynamics)

YERMOLAYEV, V.L.; SVESHNIKOVA, Ye.B.; SHIGORIN, D.N.

Nonradiative energy transfer between the triplet and singlet states in organic molecules; discussion of A.N.Terenin and V.L. Ermolaev's report "Inactivation of the triplet state in aromatic molecules". Izv. AN SSSR. Ser. fiz. 26 no.1:29-31 Ja '62. (MIRA 15:2)

(Organic compounds)
(Molecular dynamics)

ARISTOV, A.V.; ERMOLAYEV, V.L.; LEVSHIN, V.L.; MOKEYEVA, G.A.; CHERKASOV, A.S.; SHIROKOV, V.I.

Boris IAkovlevich Sveshnikov; obituary. Usp. fiz. nauk 81 no.1: 201-210 S '63. (MIRA 16:12)

L 10162-63 EPF(c)/EWT(m)/EDS--ASD--Pr-4--
RM/WW/MAY

ACCESSION NR: AP3000312 S/0048/63/027/005/0617/0622

AUTHOR: Yermolayev, V. L. 60 39

TITLE: Modes of internal deactivation of excited aromatic molecules in vitreous solutions [Report: Eleventh Conference on Luminescence held in Minsk 10-15 Sept. 1962]

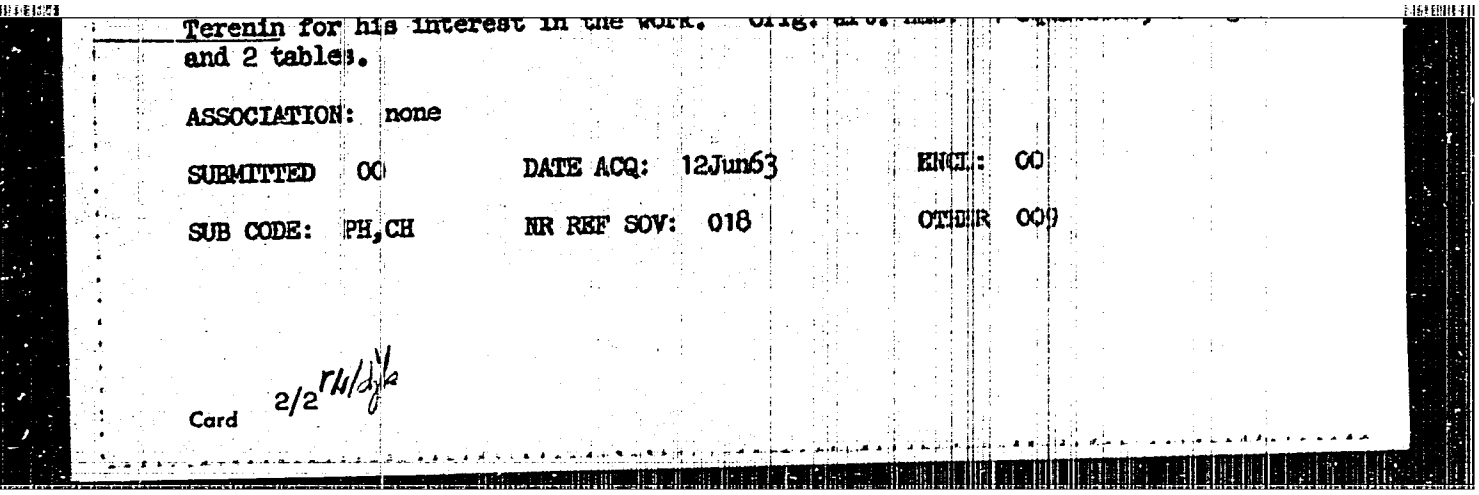
SOURCE: Izvestiya AN SSR.Seriya fizicheskaya, v. 27 no. 5, 1963, 617-622

TOPIC TAGS: molecular luminescence, molecular states, diphenyl, naphthalene

ABSTRACT: With a view to elucidating the modes of de-excitation of molecules in frozen solutions, the fluorescence and phosphorescence spectra of ordinary and fully deuterated [illegible]

as if it were calculated. Analysis of the available data indicates that in most

Card 1/2



Terenin for his interest in the work. Orig. art. has: [illegible]
and 2 tables.

ASSOCIATION: none

SUBMITTED 00 DATE ACQ: 12Jun63 ENCL: 00

SUB CODE: PH,CH NR REF SOV: 018 OTHER: 000

Card 2/2

L 10177-63 EWT(1)/BDS--AFFTC/ASD

ACCESSION NR: AP3002305 S/0053/63/080/001/0003/0040

AUTHOR: Yermolayev, V. L. 50

TITLE: Transfer of energy in organic systems with the participation of the triplet state. 3. Solid solutions and crystals

SOURCE: Uspekhi fizicheskikh nauk, v. 80, no. 1, 1963, 3-40

TOPIC TAGS: triplet level transitions, glasslike organic systems, crystalline organic systems, concentration quenching, organic phosphorescence

ABSTRACT: This article, a thorough and detailed review of recent developments in the field of energy transfer in organic systems, is the third in a series. The first (by A. N. Terenin) and the second (by Terenin and Yermolayev), were published in 1951 and 1956, respectively. The present paper deals with the study of nonradioactive electron excitation energy transfer between the triplet levels of organic molecules in glasslike and crystalline substances at low temperatures. The text is divided into three parts. Concentration quenching, decrease in quenching time, and the concentration quenching of Alpha and Beta phosphorescence

Card 1/2

L 10177-63
ACCESSION NR: AP3002305

0

are discussed in the first part; sensitized phosphorescence of organic compounds in the second; and the transfer of energy by triplet levels in organic crystalline media in the third. Orig. art. has: 15 figures, 9 formulas, and 12 tables.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 12Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 067 OTHER: 054

Card 2/2

YERMOLAYEV, V.L.; SVESHNIKOVA, Ye.B.

Inductive resonance energy transfer from aromatic molecules in the triplet state. Dokl. AN SSSR 149 no.6:1295-1298 Ap '63. (MIRA 16:7)

1. Predstavleno akademikom A.N.Tereninym.
(Aromatic compounds) (Quantum theory)

ACCESSION NR: AP4020978 S/0051/64/016/003/0548/0548

AUTHOR: Yermolayev, V.L.

TITLE: Triplet-triplet energy transfer between identical molecules in solid solutions at 90°K

SOURCE: Optika i spektroskopiya, v.16, no.3, 1964, 548

TOPIC TAGS: energy transfer, energy migration, triplet-triplet transfer, phosphorescence quenching, benzophenone, naphthalene, triplet level

ABSTRACT: The phenomenon of triplet-triplet energy transfer between different molecules was discovered by the author in collaboration with Terenin in 1952 (A.N.Terenin and V.L.Yermolayev, DAN SSSR 85,547,1952) and is known to occur in solid solutions, liquid solutions and crystals. The purpose of the present study was to determine whether it can occur between like (identical) molecules in solid solutions at 90°K. The experiments consisted in measuring the quenching of the phosphorescence of benzophenone (donor) in the presence of naphthalene (acceptor) in ether-alcohol solutions at different concentrations (from 10^{-2} to 1.17 M) of the benzophenone. The observed variation in quenching is attributed to energy migration between the

Card 1/2

ACCESSION NR: AP4020978

triplet levels of the donor. "In conclusion, I desire to express my gratitude to A.N.Terenin for his interest in the work and Kh.S.Bagdasar'yan for stimulating discussions."

ASSOCIATION: none

SUBMITTED: 28Jan64 DATE ACQ: 02Apr64 ENCL: 00

SUB CODE: PH NR REF SOV: 003 OTHER: 000

2/2

Card

YERMOLAYEV, V.L.;

Width of luminescence spectra and Stokes's losses in transitions from fluorescent and phosphorescent levels of aromatic compounds. Opt. i spektr. 16 no. 4:704-705 Ap '64. (MIRA 17:5)

L 00988-66 EWT(l)/EWT(m)/T IJP(c) DS

ACCESSION NR: AP5020780 UR/0048/65/029/008/1266/1270

AUTHOR: Yermolayev, V. L.

TITLE: Triplet-triplet energy transfer and its applications in luminescence and photochemical reactions

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 29, no. 8, 1965, 1266-1270

TOPIC TAGS: intermolecular energy transfer, triplet triplet transfer, organic molecule, luminescence, energy decay, photochemical reaction, rare earth chelate, laser

ABSTRACT: Soviet and Western research data, including 1964 data, on triplet-triplet energy transfer in organic molecules were reviewed and discussed. New data obtained by the author on triplet-triplet energy transfer between identical molecules in solid (frozen) solutions were given and discussed. The rapidly growing number of publications on the subject in the past few years (since 1962) was explained in terms of possibilities for the application of triplet-triplet energy transfer to the study of the decay of electronic excitation energy in organic molecules, mechanism of photochemical reactions, and rare-earth chelate lasers. New experimental data were reported on concentration quenching of the phosphorescence of a benzophenone-donor by

Card 1/2

L 00988-66

ACCESSION NR: AP5020780

a naphthalene-acceptor in alcohol-ether solution at 90K. Recently, preliminary data on this subject were published (Yermolayev, V. L. Optika i spektroskopiya, v. 16, no. 3, 1964, 548). The new data included changes in the phosphorescence spectrum, quantum yield, and quenching of the phosphorescence of a benzophenone-donor at high donor concentrations. These changes were explained mainly as the effect of the radiationless triplet-triplet energy transfer between identical donor molecules in solutions. This effect is considered important for biological and organic scintillators studies. In conclusion, the author expressed the belief that triplet-triplet transfer must play a significant part in photobiological processes. This paper was presented at the Thirteenth Conference on Luminescence (Organic Phosphors and Molecular Luminescence) held June 25—July 1, 1964 in Kharkov. Orig. art. has: 2 figures and 3 formulas. [JK]

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: NP, OP

NO REF SOV: 012 OTHER: 017 ATD PRESS: 4069

Card 2/2

L 11088-66 EWT(l)/T IJP(c) GS/AT

ACC NR: AT5023434 SOURCE CODE: UR/0000/65/000/000/0100/0105

38
B+1

AUTHOR: Yermolayev, V. L. 44,55

ORG: none

TITLE: Various types of nonradiative energy transfer from aromatic molecules in triplet state

SOURCE: Simpozium po elementarnym protsessam khimii vysokikh energiy. Moscow, 1963. Elementarnyye protsessy khimii vysokikh energiy (Elementary processes of the chemistry of high energies); trudy simpoziuma, Moscow, 1965, 100-105

44,55

TOPIC TAGS: particle interaction, excited state, phosphorescence, particle collision, molecular interaction

21,44,55

ABSTRACT: Various types of nonradiative energy transfer in solid solutions involving aromatic molecules in the triplet state are discussed. The first type occurs during the sensibilized phosphorescence of organic compounds in glassy solution at low temperatures. The process of deactivation occurs here according to the triplet-triplet scheme

$$^3T_D + {}^1T_A \rightarrow {}^1T_D + {}^3T_A$$

where A is acceptor and D is donor. The probability of the triplet-triplet energy transfer is independent of the singlet-triplet transformation of the acceptor mole-

Card 1/2

L 11088-66

ACC NR: AT5023434 O

cule. The triplet-triplet type energy transfer (nonradioactive) conforms to the Wigner rule of preservation of total spins of the donor and the acceptor during the energy transfer act and the nonradioactive transfer of electronic excitation energy from organic molecules in the triplet state follows the inductive-resonance mechanism. In the case of this triplet-singlet transfer the acceptor molecule transforms into the excited singlet state according to

$$^3\Gamma_D + {}^1\Gamma_A \rightarrow {}^1\Gamma_D + {}^1\Gamma_A$$

The triplet-singlet type energy transfer need not conform to Wigner's rule. This indicates that in the absence of photochemical reaction the internal decay of the electronic excitation energy of aromatic molecules occurs via triplet state. Orig. art. has: 2 figures.

SUB CODE: 20/ SUBM DATE: 23Feb65/ ORIG REF: 007/ OTH REF: 002

Card 2/2

AUTHOR: Yermolayev, V. L. 44 55

SOURCE CODE: UR/0000/65/000/000/0158/0159

ORG: none

TITLE: Triplet states of organic compounds in energy transfer

SOURCE: Simpozium po elementarnym protsessam khimii vysokikh energiy. Moscow, 1963. Elementarnyye protsessy khimii vysokikh energiy (Elementary processes of the chemistry of high energies); trudy simpoziuma. Moscow, 1965, 158-159

TOPIC TAGS: particle interaction, excited state, excited electron state, particle collision

ABSTRACT: The mechanism of energy transfer between organic molecules in solid solutions, liquid solutions and crystals is discussed in terms of resonance theory. In solid solutions, if the Wigner rule of preservation of total spin is satisfied, the energy is transferred from an organic molecule in a triplet state to another in a singlet state and is in accord with the exchange-resonance mechanism

$$^3\Gamma_D + {}^1\Gamma_A \rightarrow {}^1\Gamma_D + {}^3\Gamma_A$$

where D is a donor and A is an acceptor. This "triplet-triplet" mechanism is operative at a donor concentration in solid solution of $5 \cdot 10^{-2}$-$5 \cdot 10^{-1}$ moles/l and for the

Card 1/2

L 10840-66

ACC NR: AT5023441

3

intermolecular distance of 10-15 Å. An inductive-resonance mechanism is operative and the Wigner rule is not followed when the intermolecular distance (donor-acceptor) in the solid solution is 25-60 Å. In this case, the acceptor molecule converts into an excited singlet state according to:

$$^3\Gamma_D + {}^1\Gamma_A \rightarrow {}^1\Gamma_D + {}^1\Gamma_A$$

In the oxygen-free liquid solution, the energy transfer is of a triplet-triplet type and follows the exchange resonance mechanism. In liquid solutions the life of organic molecules in triplet state is 10^{-6}-10^{-3} sec. In case of benzene, triplet-triplet type energy transfer proceeds at an appreciable rate at an acceptor concentration of 10^{-6}-10^{-5} moles/l (293°K, $[O_2]$ = 0, life of the donor triplet state = 10^{-3} sec). The problems of triplet-singlet type energy transfer in liquid solutions and of the triplet-triplet type energy transfer in crystals remain unsolved.

SUB CODE: 20/ SUBM DATE: 23Feb65/ ORIG REF: 001/ OTH REF: 000

jw

Card 2/2

L 13631-66 EWT(m)/EWP(j)/EWP(t)/EWP(b) IJP(c) JD/JG/RM

ACC NR: AP6002421 SOURCE CODE: UR/0020/65/165/005/1048/1051

AUTHOR: Yermolayev, V. L.; Aleshin, V. G.; Sayenko, Ye. A.

ORG: none

TITLE: Determination of the energy transport velocity constants in chelates of complex rare-earth ions

SOURCE: AN SSSR. Doklady, v. 165, no. 5, 1965, 1048-1051

TOPIC TAGS: rare earth element, nonradiative transition, luminescence quenching, electron energy level

ABSTRACT: The authors describe a method for the determination of the rate constant of nonradiative transfer of electron energy from a ligand to a rare-earth molecule for complexes of dibenzoylmethanate (DBM) with Sm^{3+} and Eu^{3+} and for acetylacetonate (AA) with Sm^{3+}, Eu^{3+}, Tb^{3+}, and Dy^{3+}. The method is based on the competition between the intramolecular ligand-rare earth transfer and the intermolecular energy transfer over the triplet states of organic ligand-quencher (acceptor) compounds. The quenchers used were naphthalene for AA and acridine, anthracene, 1,2-benzanthracene, and pyrene for DBM. The rare-earth complex luminescence was excited outside the absorption band of the quencher (3340 Å for AA and 4050 Å for DBM). The measurements were made in toluol at 293K. Plots are presented of the electronic levels in triplet-triplet quenching, of the phosphorescence spectra of the ligand and of the rare earth and of the behavior of the luminescence quenching agent. The results

Card 1/2

UDC: 535.373.2

L 13631-66

ACC NR: AP6002421

show that the intermolecular triplet-triplet energy transfer between organic molecules has a higher rate constant than the ligand--rare earth transition, which has a higher order of forbiddenness. The application of the results to an analytic determination of the content of rare earths by means of the luminescence of rare-earth-complex residues is briefly discussed. Authors are grateful to Academician A. N. Terenin for interest, and to A. V. Karyakin, V. A. Arkhangel'skaya, and B. I. Maksakov for supplying the rare-earth elements. Orig. art. has: 3 figures. [02]

SUB CODE: 20/ SUBM DATE: 16Apr65/ ORIG REF: 003/ OTH REF: 012/ ATD PRESS: 4187

Card 2/2

ACC NR: AP7004147 SOURCE CODE: UR/0051/67/022/001/0165/0167

AUTHOR: Yermolayev, V. L.; Sveshnikova, Ye. B.; Sayenko, Ye. A.

ORG: none

TITLE: Study of the degradation of electron excitation in organic molecules in liquid solution by the method of triplet-triplet transfer to rare earth chelates

SOURCE: Optika i spektroskopiya, v. 22, no. 1, 1967, 165-167

TOPIC TAGS: energy transfer, photoluminescence, fluorescence, excited electron state, aromatic hydrocarbon, aromatic ketone, aromatic ether, organoeuropium compound, chelate compound, NAPHTHALENE

ABSTRACT: The controversial mechanism of degradation of excitation energy in organic molecules, such as 2-acetonaphthone, 2-methoxynaphthalene, or naphthalene, in liquid solution has been studied by the method of triplet-triplet transfer to europium tris-thenoyltrifluoroacetonate-1, 10-phenanthroline. The nonradiative energy fraction which degrades on the triple level of the organic donor molecule was determined by two procedures. Following the first procedure, the luminescence intensity of the evacuated binary solution of the organic donor molecule and chelate was compared to that of an identical but nonevacuated solution. The difference between the luminescence intensity of evacuated and nonevacuated solutions, $I_{ev} - I_{nonev}$, was equated to the intensity I_{tt} due to the energy transfer on triplet levels, under operating conditions excluding the donor to chelate energy transfer on singlet levels and the

Card 1/2 UDC: 535.373.2

ACC NR: AP7004147

reabsorption of the donor fluorescence by the chelate. The experimental values of $(I_{ev} - I_{nonev}) \times I_{nonev}^{-1}$, which are the measure of the fraction of donor molecules in the triplet state, were found nearly equal to the values of $\varepsilon_D C_D (1 - q_{fl}) \varepsilon_{ch}^{-1} C_{ch}^{-1}$, where ε and C are molar absorption coefficients and concentrations of donor and chelate and q_{fl} is the quantum yield of fluorescence of the donor. In the second procedure, the luminescence intensity of the evacuated binary solutions was compared to that of the solution of the chelate alone on excitation with a 313 nm source. Under given conditions, the ratio $(I_{ev} - I_{nonev})(I_{ch} - I_{nonev})^{-1}$ was equated with the fraction of donor molecules in the triplet state, q_{3r}. This value was found nearly equal to $1 - q_{fl}$. The conclusion was drawn from both experiments that the energy degradation in the aromatic molecules studied in liquid solution proceeds exclusively via the triplet state. Thanks are expressed to A. N. Terenin. Orig. art. has: 1 table and 1 figure. [JK]

SUB CODE: 07, 20/ SUBM DATE: 16Jun66/ ORIG REF: 004/ OTH REF: 004/

Card 2/2

GREDITOR, M.A., inzh.; YERMOLAYEV, V.M., inzh.

Automatic computer of the amount of wood in cubic meters. Mekh. i avtom.proiz. 14 no.6:48-49 Je '60. (MIRA 13:7)
(Electronic digital computer)

S/147/61/000/004/011/021
E025/E120

11.7200

AUTHORS: Yermolayev, V.M., and Talantov, A.V.

TITLE: Investigation of the effect of pressure on the speed of propagation of flames in the turbulent flow of a homogeneous mixture

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Aviatsionnaya tekhnika, no.4, 1961, 82-93

TEXT: The investigation of the dependence of the fundamental characteristics of burning on pressure are of great practical value because this problem is connected with the known worsening of the efficiency of the combustion chambers at great heights. The published investigations into the effect of pressure on burning were carried out for axially symmetrical flows in a small range of variation of the fundamental parameters. In most cases the speed of flow and composition of the mixture were not varied. In the present investigation the speed of propagation of the flame has been varied from 20 to 80 m/sec, the composition of the mixture has been varied from 1 to 1.5,

Card 1/4

the pressure from 0.35 to 1.4 kg/cm^2 and the temperature was equal to 423 °K. To obtain the best approximation to the conditions of burning in an engine the experiment was carried out on a flow bounded by walls in a chamber of constant section with forced turbulence of the flow. The combustion chamber was a tube of square section 50 x 50 mm of length 1700 mm, cooled externally by water. A very detailed schematic diagram of the experimental arrangements is given. The values of speed of propagation of the flame in the turbulent flow for various speeds of the flow, mixtures and pressures were obtained, and from these were constructed graphs giving the relation between the speed of propagation of the flame and the pressure for various mixtures and flow speeds. A comparison of the nature of the relation between the speed of propagation of the flame and the pressure for various mixtures and flow speeds was made by the use of dimensionless flame propagation velocities and pressure ratios. The effects due to lengthening and shortening the flame are discussed. The following conclusions are arrived at:

Investigation of the effect of ... S/147/61/000/004/011/021
E025/E120

1) The values and nature of the speed of propagation of a flame are approximately the same in a turbulent flow bounded by walls and in open turbulent flow. 2) The speed of propagation of the flame is proportional to the 0.8-th power of the pulsation velocity, taking account of the dependence of the latter on the pressure. 3) Damping of the turbulence is responsible for varying estimates of the effect of the pressure on the speed of the flame for different speeds of flow and mixtures. Hence it is necessary to calculate the speed of propagation of the flame taking account of the normal and pulsation velocities and their dependence on pressure and damping. 4) The speed of propagation of the flame in a closed turbulent flow is in good agreement with theory when the effect of damping of the turbulence is eliminated. 5) The decrease in the speed of propagation of the flame with fall of pressure is one of the causes of decreased efficiency of the processes in the combustion chambers of primary engines in high altitude conditions.
There are 10 figures.

Card 3/4

Investigation of the effect of ... S/147/61/000/004/011/021
E025/E120

ASSOCIATION: Kazanskiy aviatsionnyy institut, Kafedra teorii aviadvigateley
(Kazan' Aviation Institute, Department of Theory of Aircraft Engines)

SUBMITTED: April 3, 1961

Card 4/4

YERMOLAYEV, V.M.; TALANTOV, A.V.

Investigating the effect of pressure on the length of the combustion zone in a closed turbulent flow of a uniform mixture. Izv.vys.ucheb.zav.; av.tekh. 5 no.3:143-156 '62. (MIRA 15:9)
(Combustion)

ISKHAKOV, G.Kh., inzh.; YERMOLAYEV, V.M.

Conference on improvement of efficiency in the electric equipment industry in the Urals. Vest. elektroprom. 34 no.2:76-77 F '63. (MIRA 16:2)
(Electric equipment industry—Congresses)

YERMOLAYEV, V.M.; TALANTOV, A.V.

Rate of flame propagation in an open and limited flow of homogeneous mixture. Izv.vys.uchseb.zav.;av.tekh. 7 no.2:134-141 '64. (MIRA 17:9)

YERMOLAEV, V. K.

PHASE I Treasure Island Bibliographic Report

BOOK Call No.: TN871.M37

Authors: ERMOLAEV, V. K. and MARAMZIN, A. V.

Full Title: FOREMAN OF STRUCTURAL WELL DRILLING

Transliterated Title: Master strukturnogo burenila

Publishing Data

Originating Agency: None

Publishing House: State Scientific-Technical Publishing House of Oil and Mineral Fuel Literature. Leningrad Branch. (Gostoptekhizdat)

Date: 1952 No. pp.: 318 No. copies: 7,000

Editorial Staff

Editor: Gridin, V. K. Tech. Ed.: None

Ed.-in-Chief: Permingv, S. V. Appraiser: None

Text Data

Coverage: The book contains elementary data on geological structures, construction of derricks, arrangement of equipment, types and quality of drilling tools, and characteristics of various materials (metals, lubricants, transmission belts and transmission cables, cement, lumber, etc.) used in well drilling. The practical methods of drilling wells for geological surveys (mapping), structural, and prospecting drilling are described; also, methods of computing simple work problems and rates of drilling through various strata.

Purpose: A textbook for well drilling foremen and personnel engaged in surveying and prospecting.

Facilities: None

No. Russian References: 11

Available: Library of Congress

YERMOLAYEV, V.M.; MARAMZIN, A.V.; KOVALEVA, A.A., inzhener, vedushchiy redaktor; POLOSINA, A.S., tekhnicheskiy redaktor.

[Structural boring; practical manual for workmen] Strukturnoe burenie; prakticheskoe posobie dlia rabochikh. Moskva, Gos. nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, 1954. 138 p. (MLRA 8:1)

(Boring)

Yermolayev, Vasiliy Mikhaylovich

MARAMZIN, Aleksandr Vasil'yevich; YERMOLAYEV, Vasiliy Mikhaylovich; VITTORF, M.V., redaktor; PERMINOV, S.V., redaktor; GONIKBAD'YEVA, I.M., tekhnicheskiy redaktor

[Drilling structural and exploratory wells] Burenie strukturno-poiskovykh skvashin. Leningrad, Gos.nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, 1955. 363 p. (MLRA 9:3)
(Boring machinery) (Oil well drilling)

MARAMZIN, Aleksandr Vasil'yevich; YERMOLAYEV, Vasiliy Mikhaylovich [deceased]; SHEVTSOVA, E.M., ved. red.

[Boring structural prospecting holes] Burenie strukturno-poiskovykh skvazhin. Izd.2., isp. i dop. Leningrad, Nedra, 1964. 390 p. (MIRA 17:9)

LYUBCHENKO, A.P.; YERMOLAYEV, V.N.

Effect of cerium on the self-diffusion of iron. Fiz. met. i metalloved. 14 no.1:157-160 Jl '62. (MIRA 15:7)
(Iron—Metallography)
(Cerium)

SHNYAKIN, A.I., insh.; YERMOLAYEV, V.N., insh.

Technology of blast furnace gas purification and the design of scrubbers. Stal' 23 no.2:176-178 F '63. (MIRA 16:2)

1. Magnitogorskiy metallurgicheskiy kombinat.
(Gases--Purification)
(Scrubber (Chemical technology))

YERMOLAYEV, V.P.

ERMOLAEV, V. P., and N. P. KONOCHUK.

Pamiatka normirovshchiku-stroiteliu. Moskva, 1948. 70 p., forms.
At head of title: Nauchno-issledovatel'skii aerodromnyi institut VVS VS.
Title tr.: Instructions of experts in setting construction work standards.

TL725.2.K6

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955.

YERMOLAYEV, V.P. EXCERPTA MEDICA Sec 9 Vol 13/2 Surgery Feb 59

868. (316) EXPERIMENTAL PARENTERAL PROTEIN NUTRITION IN SURGICAL PATIENTS (Russian text) - Ermolaev V. P. - KHIRURGIJA 1958, 2 (97-102) Graphs 3 Tables 2

Data concerning metabolism in patients following operations on the gastrointestinal tract and in burned patients are presented. Pronounced negative nitrogen balance (7-12 g.) was revealed in the postoperative period. In burned patients and in cases with postoperative complications nitrogen balance equalled from 30 to 35 g. in 24 hr. There was a loss of weight and reduced content of protein in the plasma. Pro-

868

tein was administered parenterally in 20 postoperative cases and in 5 cases with burns, and 55 i.v. injections were carried out. In 12 cases untoward side-reactions were observed, which were severe in 5. Aminopeptide - a new preparation of heterogenic protein, fermentative hydrolysate of whole animal blood - was investigated thoroughly. It was tested clinically in 174 patients (85 postoperative and 89 burn cases). Aminopeptide was administered i.v., i.m. and s.c. in a dose of 800-1,500 ml. (18 to 20 injections to each patient); 2 patients had fever and chills. In order to determine the efficacy of parenteral administration of aminopeptide in 28 postoperative and 12 burn cases, determination was made of nitrogen balance, protein content of blood plasma, excretion of urea and amino nitrogen in the urine. The results of these experiments show that aminopeptide has no anaphylactogenic properties and is not toxic. Nitrogen, administered in this form, is readily assimilated by the organism, irrespective of the method of its introduction. It is possible to maintain nitrogen equilibrium and a positive balance if an adequate dose of aminopeptide is given. Clinical observations and laboratory examinations allow of the conclusion that aminopeptide is an effective preparation in parenteral protein nutrition in surgical patients and its recommendation for wide clinical use is warranted

YERMOLAYEV, V.R., kandidat meditsinskikh nauk

Modification of protein metabolism in some surgical patients with parenteral infusion [with summary in English, p. 157] Vest.khir. 77 no.6:12-17 Je '56. (MLRA 9:8)

1. Iz gospital'noy khirurgicheskoy kliniki (nach. prof. I.S. Kolesnikov, nauchn. rukovod. - prof. S.S.Girgolav) Voyenno-meditsinskoy ordena Lenina akademii im. S.M.Kirova. Leningrad, Botkinskaya ul., d.19, kv. 126.

(INFUSION, PARENTERAL,
protein hydrolysate in protein depletion in surg. (Rus))
(PROTEINS,
hydrolysates, parenteral infusion in protein depletion in surg. (Rus))
(SURGERY, OPERATIVE, complications,
protein depletion, ther., protein hydrolysate parenteral infusion (Rus))

YERMOLAYEV, V.R.

YERMOLAYEV, V.R., kand.med.nauk (Leningrad, 9, Botkinskaya ul., d.19, kv.126)

Thrombosis and embolism of the pulmonary artery following lung surgery [with summary in English]. Vest.khir. 79 no.9:55-62 S '57. (MIRA 10:11)

1. Iz gospital'noy khirurgicheskoy kliniki (nach. - prof. I.S. Kolesnikov) Voyenno-meditsinskoy ordena Lenina akademii im. S.M. Kirova.

(ARTERIES, PULMONARY, dis.
embolism & thrombosis after lung surg.)
(PNEUMONECTOMY, compl.
embolism & thrombosis of pulm. artery)

YERMOLAYEV, V.R., kand.med.nauk

Parenteral protein nutrition for surgical patients [with summary in English]. Khirurgiia 33 no.9:97-102 S '57. (MIRA 11:4)

1. Iz gospital'noy khirurgicheskoy kliniki (nach. - prof. I.S. Kolesnikov) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M.Kirova.

(PROTEINS, ther. use
pare burns & postop. care, parenteral admin.)
(BURNS, ther.
proteins, parenteral admin.)
(POSTOPERATIVE CARE
parenteral admin. of proteins)
(INFUSIONS, PARENTERAL
proteins, in burns & postop. care)

YERMOLAYEV, V.R., kand.med.nauk; SHATALOVA, N.A., kand.med.nauk

Chronic atelectasis of the middle lobe and lingula of the lung of varied etiology [with summary in English]. Vest.khir. 82 no.1:86-93 Ja '59. (MIRA 12:2)

1. Iz gospital'noy khirurgicheskoy kliniki (nach. - prof. I.S. Kolesnikov) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M. Kirova. Adres avtora: Leningrad, K-9, Botkinskaya ul., d.23, gospital'naya khirurgicheskaya klinika.
(ATELECTASIS, etiol. & pathogen.
chronic, of middle lobe & lingula (Rus))

YERMOLAYEV, V.R., mayor meditsinskoy sluzhby, kand.med.nauk

Healing of wounds containing a foreign body following total-body irradiation of animals. Voen.-med.zhur. no.4:88 Ap '60. (MIRA 14:1)

(WOUNDS) (RADIATION--PHYSIOLOGICAL EFFECT)

YEMOLAYEV, V.R., kand.med.nauk

Avulsion of the main bronchus in blunt trauma of the thorax. Khirurgiia 37 no.1:93-17 Ja '61. (MIRA 14:2)

1. Iz gospital'noy khirurgicheskoy kliniki (nav. - prof. I.S. Kolesnikov) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M. Kirova.
(CHEST--WOUNDS AND INJURIES) (BRONCHI--WOUNDS AND INJURIES)

GREBENNIKOVA, A. T., kand. med. nauk; YERMOLAYEV, V. R., kand. med. nauk

Acute gastric obstruction caused by complete relaxation of the left half of the diaphragm with transposition of the stomach, spleen and left lobe of the liver into the thoracic cavity. Khirurgiia 37 no.7:87-90 Jl '61. (MIRA 15:4)

1. Iz kliniki gospital'noy khirurgii No. 1 (nach. - prof. I. S. Kolesnikov) Voyenno-meditsinskoy ordena Lenina akademii imeni S. M. Kirova.

(DIAPHRAGM--DISEASES) (STOMACH) (LIVER) (SPLEEN)

YERMOLAYEV, V.R. (Leningrad, K-9, ul. Smirnova, d. 10-a, kv.22)

Surgical treatment of late Bronchoesophageal fistulae. Grudn. khir. 4 no.5:111-113 S-O'62 (MIRA 17:3)

1. Iz kliniki gospital'noy khirurgii No.1 (nachal'nik - prof. I.S. Kc"esnikov) Voyenno-meditsinskoy ordena Lenina akademii imeni Kirova.

YERMOLAYEV, V.R. (Leningrad, ul. Smirnova d.10-a, kv.22)

Intrapleural hemorrhages following radical pulmonary surgery. Grud.khir. no.4:76-82 Jl-Ag '62. (MIRA 15:10)

1. Iz kliniki gospital'noy khirurgii No. 4 (nach. - prof. I.S. Kolesnikov) Voyenno meditsinskoy ordena Lenina akademii imeni S.M. Kirova.

(LUNGS--SURGERY)
(HEMORRHAGE)

YERMOLAYEV, V.R., kand.med.nauk (Leningrad, K-9, ul. Smirnova, d.10a, kv.22)

Late results of the surgical treatment of bronchiectasis. Klin. khir. no.11:22-28 N '62. (MIRA 16:2)

1. Kafedra gospital'noy khirurgii (nach. - laureat Leninskoy premii prof. I.S. Kolesnikov) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M. Kirova.
(BRONCHIECTASIS)

YERMOLAYEV, V.R. (Leningrad K-9, ul. Smirnova, d. 10a, kv.22)

Segmental and combined resect'ons of the lungs in bronchiectasis. Grud.khir. 4 no.6:59-66 N-D'62. (MIRA 16:10))

1. Iz kliniki gospital'noy khirurgii No.1(nachal'nik -prof. I.S.Kolesnikov) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M.Kirova.
(BRONCHI—DISEASES) (LUNGS—SURGERY)

YERMOLAYEV, V.R., kand. med. nauk

Primary failure of the bronchial stump and the pulmonary wound following radical operations on the lungs. Khirurgiia 38 no.12:14-19 D '62. (MIRA 17:6)

1. Iz gospital'noy khirurgicheskoy kliniki No.1 (nachal'nik - prof. I.S. Kolesnikov) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M. Kirova.

KOLESNIKOV, I.S., prof.; PUTOV, N.V., prof.; YERMOLAYEV, V.R., kand.med. nauk; SOKOLOV, S.N., kand.med.nauk

Acute blood circulation disorders in the residual lung part following patrial resections. Vest.khir.90 no.2:128-135 F'63. (MIRA 16:7)

1. Iz gospital'noy khirurgicheskoy kliniki (nachal'nik prof. I.S.Kolesnikov) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M.Kirova. Adres avtorov: Leningrad, Botkinskaya ul., d.23, Gospital'naya khirurgicheskaya klinika Voyenno-medistinskoy ordena Lenina akademii imeni Kirova.

(LUNGS—SURGERY)
(BLOOD—CIRCULATION, DISORDERS OF)

YERMOLAYEV, V.R., kand.med.nauk (Leningrad, K-9, ul. Smirnova, d.10-a, kv.22)

Resection of the lungs in bilateral bronchiectasis. Vest. khir. 90 no.3:11-19 Mr'63. (MIRA 16:10)

1. Iz 1-y gospital'noy khirurgicheskoy kliniki (nachal'nik prof. I.S.Kolesnikov) Voyenno-meditsinskoy ordena Lenina akademii imeni Kirova.
(LUNGS—SURGERY) (BRONCHIECTASIS)

YERMOLAYEV, V.R., dotsent (Leningrad, ul. Smirnova, d.10-a, kv.22)

Some characteristics of the technique of lung resection in bronchiectasis. Vest. khir. 91 no.9:25-29 S'63. (MIRA 17:4)

1. Iz gospital'noy khirurgicheskoy kliniki (nachal'nik - prof. I.S. Kolesnikov) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M. Kirova.

KOLESNIKOV, I.S.; ORDZHONIKIDZE, G.K.; SHELYAKHOVSKIY, M.V.; YEFIMOLAYEV, V.R.
YAKUBOVSKIY, F.I.

Adenoma of the bronchi, their complications and operative treatment. Grud. khir. 5 no.6:101-106 N-D'63 (MIRA 17:2)

1. Iz kliniki gospital'noy khirurgii (nachal'nik - prof. I.S. Kolesnikov) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M.Kirova. Adres avtorov: Leningrad K-9, Botkinskaya ul., d.23. Klinika gospital'noy khirurgii Voyenno-meditsinskoy ordena Lenina akademii imeni S.M. Kirova.

14(5) SOV/127-59-3-8/22

AUTHORS: Yermolayev, Y.I., Bakaleynik, Ya.M. and Vinogradov, L.V., Engineers.

TITLE: The Semi-Automatic Control of Mechanisms in the Mine Shaft. (Poluavtomaticheskoye upravleniye mekhanizmami shakhtnogo stvola.)

PERIODICAL: Gornyy zhurnal, Nr 3, 1959, pp 31-33 (USSR)

ABSTRACT: An experimental installation for the semi-automatic control of hoising mechanisms in the Kapital'naya Nr 2 pit of the Degtyarka Copper Mine has successfully passed industrial tests. The installation was developed by the KB TsMA (Design Office of Tsvetmetavtomatika) in collaboration with the Degtyarka Mine. The maximum utilization of already existing mechanisms equipped with pneumatic gear was taken into consideration. Air distributing devices VR-350 (figure 1) developed from ENIMS air distributors, are used in the system. Two men in the hoist cage direct different operations in the hoisting shaft. The system is des-

Card 1/2

The Semi-Automatic Control of Mechanisms in the Mine Shaft.

cribed in detail (figure 2). The introduction of this system in the Kapital'naya Nr 1 and Nr 2 pits will permit a reduction of 30 men in the working staff. This represents an yearly saving of 340,000 rubles. There are 2 diagrams.

ASSOCIATION: Tsvetmetavtomatika, Moscow.

YERMOLAYEV, V.I.

Phytoplankton of Lake Krivoye of the Karasuk River system. Trudy TSSBS no.8:82-96 '64. (MIRA 18:7)

L 01293-66 EWT(1) GW
ACCESSION NR: AP5017080 UR/0290/65/000/001/0094/0099
581.526.325

AUTHOR: Yermolayev, V. I. 55

TITLE: Primary production of lakes with lowered water levels in the northern part of the Kulundisk Steppe

SOURCE: AN SSSR, Sibirskoye otdeleniye, Izvestiya, Seriya biologo-meditsinskikh nauk, no. 1, 1965, 94-99

TOPIC TAGS: lake, hydrology, algae, photosynthesis, plant respiration, plant ecology 12,55

ABSTRACT: In 1962 phytoplankton production of Lake Krivoye (Karasuksiy Rayon of Novosibirskaya Oblast') was investigated when its water level was 35 cm below normal, and in 1963 the phytoplankton production of Lake Kusgan (in the same rayon) was investigated when its water level was 45 cm below normal. Phytoplankton production was

cm) and at depths of 1 and 1.6 m 1-3 times a month from June to September. At the same time water samples (0.5 l) were filtered to determine the number of algae colonies and cells and the amount of

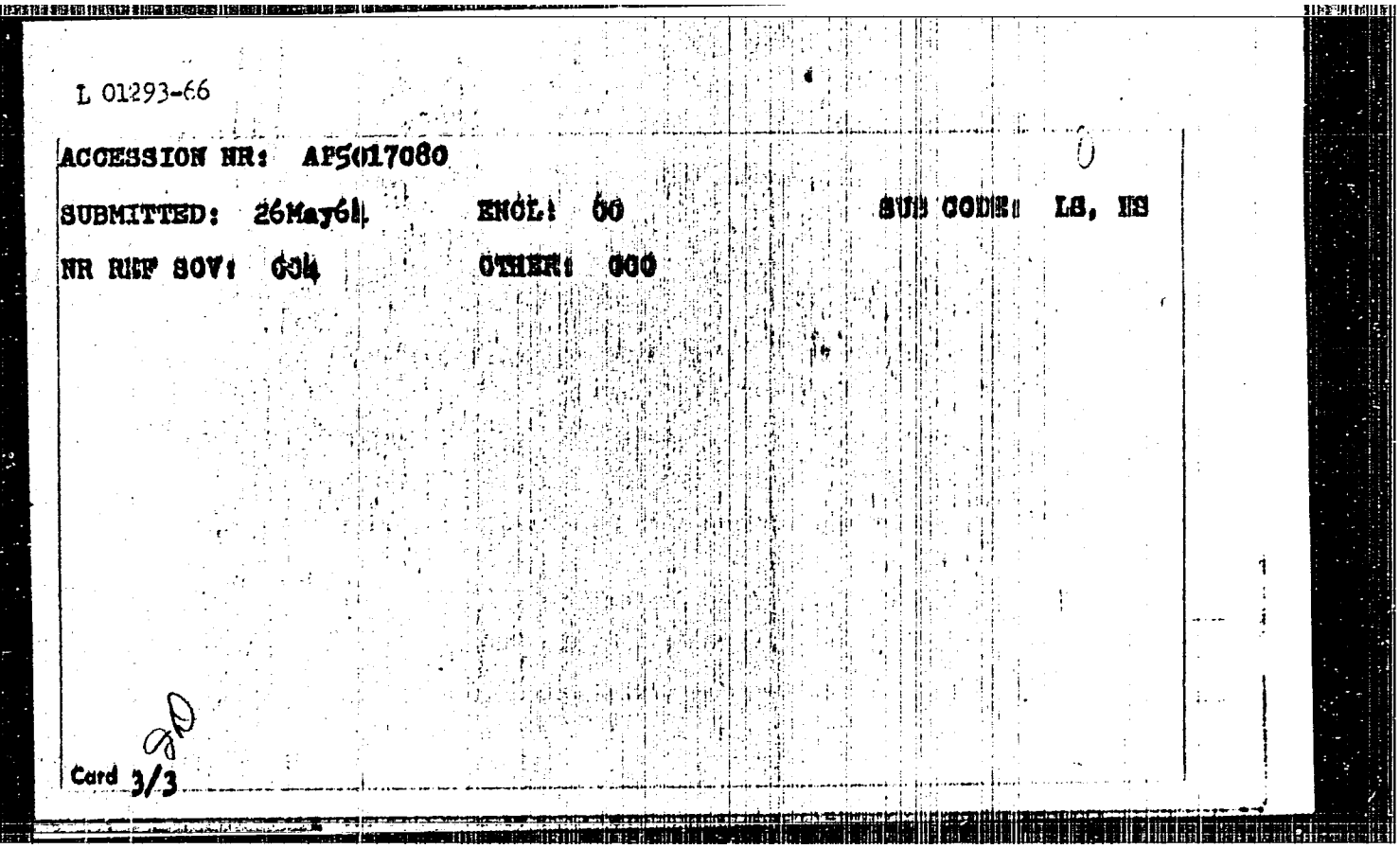
Card 1/3

L 01293-66
ACCESSION NR: AP5017080

phytoplankton biomass. The coefficient of photosynthesis intensity and respiration intensity was determined and the amount of oxygen released per hectare of lake surface at a mean depth of 1.6 m was also determined. Findings show that both lakes at lowered water levels maintained their photosynthetic activity despite a significant level of dissolved salts in the water (1000 to 1296 mg/l). The seasonal oxygen production of Lake Kusgan, which is more shallow and more mineralized than Lake Krivoye, was significantly higher. Both bodies of water are characterized by intense development of blue-green algae during the summer months. As a rule, seasonal changes in phytoplankton production show that with increased numbers of phytoplankton in a given unit of volume, the intensity of its photosynthesis increases. However, no true correlation was established between the values of true phytoplankton photosynthesis (coefficient of photosynthesis intensity and respiration intensity), phytoplankton numbers, and phytoplankton biomass. Orig. art. has: 4 tables.

ASSOCIATION: Tsentral'nyy Sibirskiy botanicheskiy sad Sibirskogo otdeleniya AN SSSR, Novosibirsk (Central Siberian Botanical Garden of the Siberian Branch of AN SSSR)

Card 2/3



L 01293-66

ACCESSION NR: AP5017080

SUBMITTED: 26May64 ENCL: 00 SUB CODE: LS, IE

NR REF SOV: 004 OTHER: 000

Card 3/3

L 4943-66 EWT(1)/EWT(m)/EPF(c)/EWP(t)/EWP(j)/T/EWP(t)/EWP(z)/EWP(b)
ACC NR: AP5025697 IJP(c) JD/RM/JG/ SOURCE CODE: UR/0286/65/000/018/0047/0047

AUTHORS: Artemov, A. N.; Yermolayev, V. I.; Nazarova, R. G.; Pal'chov, G. I.; Razuvayev, O. A.; Solov'yev, I. F.; Solov'yeva, N. A.; Sorokin, Yu. A.

TITLE: Method for manufacturing film type [redacted]
No. 174697

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 18, 1965, 47

TOPIC TAGS: electric resistor, chromium, nickel

ABSTRACT: This Author Certificate presents a method for manufacturing thin film electrical resistors by vacuum deposition of Cr and Ni onto an insulating base. [illegible] of the metal film to the insulating base and to decrease

dicyclopentadienylcarbonylnickel ($C_5H_5Ni(CO))_2$ in the [illegible]

Card 1/2

UDC: 621.316.849.539.216.2.002.2

0901 15 rd

YERMOLAYEV, V.I.

Winter phytoplankton in Lake Krivoye of the Karasuk River system.
Trudy TSSBS no.10:45-49 '65.

Phytoplankton in Lake Studenoye of the Karasuk River System.
Ibid.:50-56 (MIRA 18:10)

30919
S/195/61/002/003/004/009
E030/E452

11.1510

AUTHORS: Molin, Yu.N. and Yermolayev, V.K.

TITLE: The causes of the change in proton relaxation time during irradiation of aqueous solutions

PERIODICAL: Kinetika i kataliz, v.2, no.3, 1961, 358-361

TEXT: Hitherto the decrease in relaxation times have been attributed to the formation of free radicals, but calculation shows that improbably high concentrations, 10^{17} to 10^{18} g^{-1} would be necessary to give the size of effect observed. The present work therefore resolves this question by irradiating solutions of hydrogen peroxide and also distilled water, hexane, benzene and solutions of benzoyl peroxide in benzene, and aqueous solutions close in concentration to those used previously by V.M.Vdovenko and V.A.Shcherbakov (Ref.2: Dokl. AN SSSR, v.127, 127, 1959), and observing simultaneously the NMR signal and also the EPR signal, the latter indicating the formation of any paramagnetic bodies, including free radicals. The apparatus consists of an EPR magnet, with a hole drilled through one pole, to admit a beam of fast (1.6 MeV) electrons. The specimen is held in a glass ampule, diameter 7 mm and volume 0.25 cm^3, which is located close to the

Card 1/3

The causes of the change ...

opposite pole to minimize the field inhomogeneity due to the hole. The NMR field coils are wound on a former which slides over the ampule. The NMR signal is calibrated with standard $CuSO_4$ solutions with Cu^{++} concentrations of $\sim 10^{17}$ cm^{-3}; the sensitivity is rather less than in previous work because of the increased field inhomogeneity. The specimen of 30% stabilized impurified H_2O_2 was irradiated at 6×10^4 rad/sec and after 2 min the amplitude of NMR signal, which had increased rapidly within seconds, reached a high steady value, equivalent to 4×10^{19} ions Cu^{++} cm^{-3}. On removal of the irradiation, the signal fell over some 30 min to about one third this value and then appeared constant. It was remarkable that all this time there was no observable change in the EPR signal, thus precluding the formation of a significant concentration of free radicals. Similar results were not obtained with the other solutions. The only plausible explanation of the results is that the relaxation time is decreased by supersaturation into free oxygen, which is known to be formed on irradiation of hydrogen peroxide; this is confirmed by the lack of signal in the other solutions indicating that not more than about 10^{17} cm^{-3} free radicals could remain undetected, and by the failure of the signal to revert to its initial small value in H_2O_2, as should have

occurred if formation of free radicals were the operative mechanism. Acknowledgments are expressed to V.V.Voyevodskiy and N.Ya.Buben for their interest in the work. There are 2 figures and 9 references: 6 Soviet and 3 non-Soviet. The references to three English language publications read as follows:
Ref.1: W.T.Duffy, Bull. Amer. Phys. Soc., II, v.4, 250, 1958;
Ref.8: J.G.Marshall, P.V.Rutledge, Nature, v.184, 2013, 1960;
Ref.9: G.Chiarotti, L.Guilotto, Phys. Rev., v.93, 1241, 1954.

ASSOCIATIONS: Institut khimicheskoy fiziki AN SSSR
(Institute of Chemical Physics AS USSR)
Institut khimicheskoy kinetiki i goreniya SO AN SSSR
(Institute of Chemical Kinetics and Combustion SO AS USSR)

SUBMITTED: October 31, 1961

35062
S/195/62/003/001/003/010
E071/E136

11.1510

AUTHORS: Yermolayev, V.K., Molin, Yu.N., and Buben, N.Ya.

TITLE: Recombination of radicals in solid organic substances. I. Investigation by the method of fusion

PERIODICAL: Kinetika i kataliz, v.3, no.1, 1962, 58-64

TEXT: The range of temperatures at which recombination of radicals takes place on fusion of various organic substances, irradiated with fast electrons, was studied by the ЭПР (EPR) method. The object of this work was to determine the molecular movements leading to the recombination of radicals in a solid. For this reason the substances investigated had a known phase behaviour on heating. Normal alcohols, ketones, hydrocarbons, aromatic compounds etc. were investigated. To determine the stability of radicals at various temperatures, fusion curves were obtained. For this purpose a substance was irradiated at a sufficiently low temperature T_o in a stream of fast electrons to obtain a concentration n_o of radicals. The irradiation was stopped at the beginning of the linear part of the curve of accumulation of radicals ($n_o \approx 10^{19}$ radicals/g).

Card 1/3

The temperature T_o was so chosen that during 10-15 minutes no noticeable decrease in the concentration of radicals occurred. The substance was then heated for 2 minutes at a temperature $T_1 > T_o$, cooled to T_o and the concentration of radicals n_1 measured etc. The dependence n_i (T_i) was called the fusion curve. It was established that for crystalline substances (substances of type I) a rapid recombination of radicals occurs, as a rule, before melting; for amorphous substances the process takes place near the divitrification temperature. For cyclopentane and cyclohexene (type II), radicals recombine near the temperature of their polymorphic transformation. For hexamethylbenzene, acetone, succinic acid (type III) several ranges of recombination of radicals can be separated. In the majority of cases the recombination of radicals is, apparently, caused by self diffusion, appearing close to the temperature of a phase change. For substances of type III the recombination of radicals takes place at a temperature at which the self diffusion of molecules is apparently absent, e.g. in hexamethylbenzene and acetone, radicals recombine partially in the region at which

the molecules begin to rotate. The recombination of radicals in the absence of self diffusion could be explained by the formation of radicals close to each other, e.g. on the neighbouring molecules in pairs. Then initiation of any molecular movement may lead to their recombination. However, the formation of radicals on neighbouring molecules should be accompanied by a strong widening of components of the superfine structure of the EPR spectra, much higher than was actually observed.

The authors thank V.V. Voyevodskiy and G.K. Voronova for their assistance. Part of the material of the present paper was presented at the Second All-Union Conference on Radiation Chemistry. There are 5 figures.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR
(Institute of Chemical Physics, AS USSR)
Institut khimicheskoy kinetiki i goreniya SO AN SSSR
(Institute of Chemical Kinetics and Combustion SO AS USSR)

SUBMITTED: August 14, 1961

43236
S/844/62/000/000/056/129
D204/D307

AUTHORS: Yermolayev, V. K., Molin, Yu. N. and Buben, N. Ya.

TITLE: Recombination of radicals in some frozen organic compounds

SOURCE: Trudy II Vsesoyuznogo soveshchaniya po radiatsionnoy khimii. Ed. by L. S. Polak. Moscow, Izd-vo AN SSSR, 1962, 331-334

TEXT: The present work was aimed at a study of the molecular motions occurring during the recombination of radicals formed under the action of fast electrons at a temperature T_0, such that n_0, the number of radicals formed, remains fairly constant over 10 - 15 min. The compounds were then warmed up to a series of temperatures T_i (where $T_i > T_0$), maintained at T_i for 2 min and cooled back to T_0, at which temperature the remaining concentrations of radicals, n_i, were measured. In cystalline compounds, such as MeOH, C_6H_6 or n-octanol, the radicals disappeared at 0.9 - 1.0 T_m (where T_m =

Card 1/3

S/844/62/000/000/056/129
D204/D307

m.p.), whilst in poorly crystallizing substances, such as glycerol or n-butanol, the recombination took place in the region of vitrification (0.6 - 0.7 T_m). This rule was confirmed on slowly frozen (crystalline) and quenched (amorphous) 1,1-dicyclohexyldodecane; cooling at an intermediate rate gave rise to (n_i/n_o) versus $(\frac{T}{T_m})$ plots of an intermediate character, showing the presence of crystellites of varying temperature stability. Such intermediate type curves were the only ones observed for paraffin, polyethylene and polypropylene. The recombination is connected with partial destruction of the lattice and amorphous compounds respectively. In cyclopentane and cyclohexane, in which molecular rotation begins at T_{rot} ($T_{rot} \ll T_m$), it was found that recombination of the radicals took place at T_{rot}, showing that the radicals are probably formed in pairs and recombine as soon as rotation becomes possible. The assistance of V. V. Voyevodskiy and G. K. Voronova is acknowledged. There are 4 figures.

Recombination of radicals ...

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics, AS USSR); Institut khimicheskoy kinetiki i goreniya SO AN SSSR (Institute of Chemical Kinetics and Combustion, Siberian Branch of the AS USSR)

Card 3/3

PA 175T77

YERMOLAYEV, V. L.

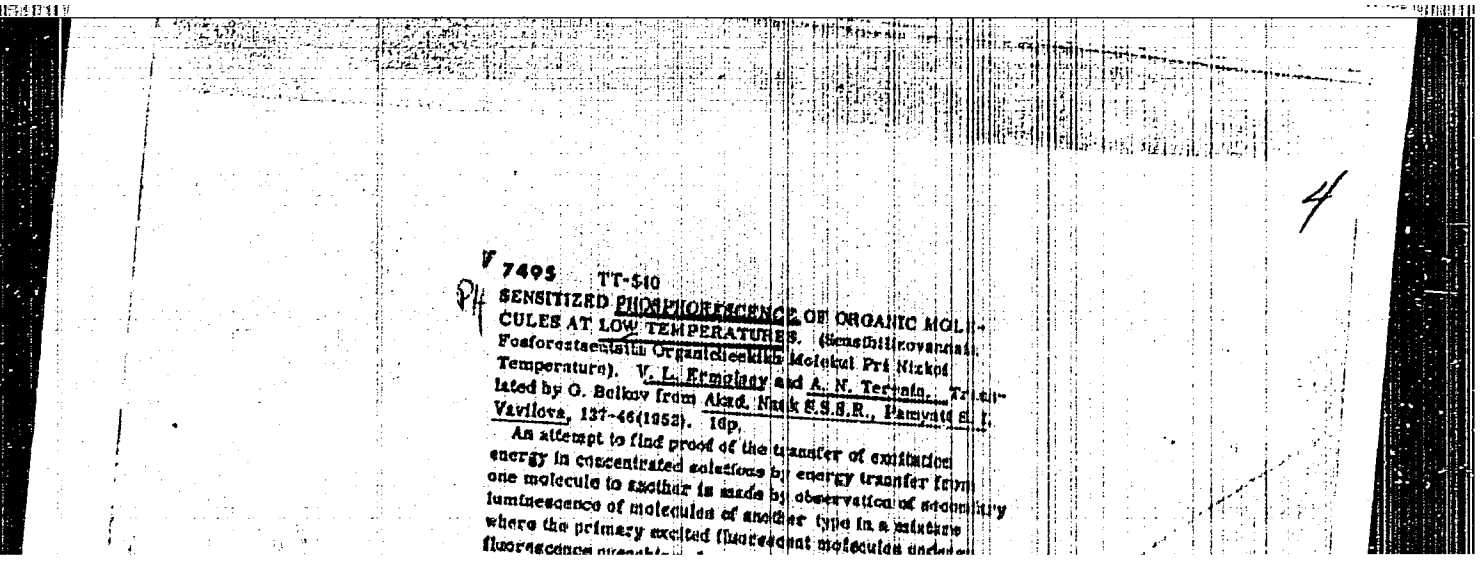
USSR/Physics - Phosphorescence 1 Apr 50

"Polarization of Phosphorescence of Organoluminophors at Temperatures of Liquid Air," B. Ya. Sveshnikov, V. L. Yermolayev

"Dok Ak Nauk SSSR" Vol LXXI, No 4, pp 647-650

Studies variation in deg of polarization (g/cu cm) of phosphorescence of alc soln of tripaphlavin, etc., at temp of liquid air in dependence upon concn of activator (p in %) also upon time of extinguishing (t in sec) and for various wave lengths of exciting light (436, 366, 313 millimicrons). Submitted 2 Feb 50 by Acad S. I. Vavilov.

175T77

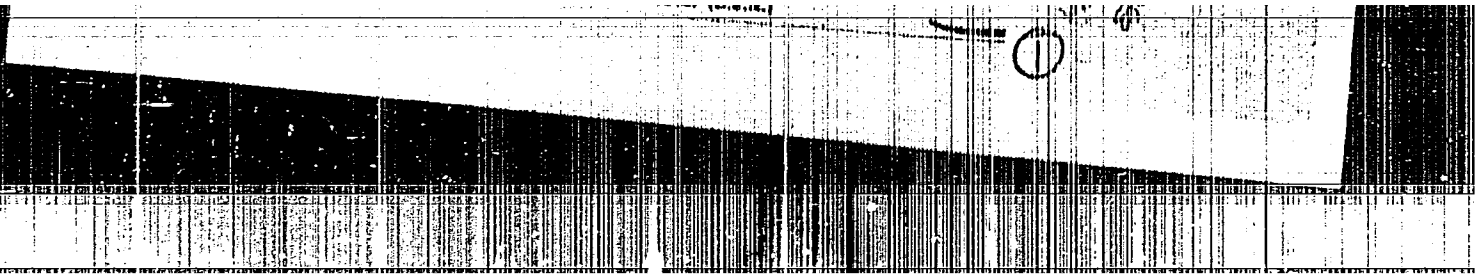


4

7495 TT-540

SENSITIZED PHOSPHORESCENCE OF ORGANIC MOLECULES AT LOW TEMPERATURES. (Sensibilizovannaia fosforestsentsiia organicheskikh molekul pri nizkoi Temperature). V. L. Ermolaev and A. N. Terenin. Translated by O. Belkov from Akad. Nauk S.S.S.R., Pamyati S. I. Vavilova, 137-46(1952). 1dp.

An attempt to find proof of the transfer of excitation energy in concentrated solutions by energy transfer from one molecule to another is made by observation of sensitized luminescence of molecules of another type in a mixture where the primary excited fluorescent molecules undergo fluorescence quenching



APPROVED FOR RELEASE: 03/20/2001 CIA-RDP86-00513R001962810020-2"

USSR/Physics - Phosphorescence Sensiti- 21 Jul 52
zation

235T92

"Sensitization of Phosphorescence of Organic Molecules at Low Temperatures: Intermolecular Transfer of Energy With Excitation of the Triplet Level," Acad A. N. Terenin, V. L. Yermolayev

"Dok Ak Nauk SSSR" Vol 85, No 3, pp 547-550

Discusses investigations devoted to the problem of transfer of excitation energy in solns of mixts of fluorescing aromatic mols at temp of liquid air, for the purpose of establishing the phenomenon of sensitization of excitation by one compd of the

235T92

Phosphorescence spectrum of another compd, denoted by A+B. Gives tables and graphs of intensity of sensitized phosphorescence of various compds in dependence on concn of another. Submitted 3 May 52.

235T92

USSR/ Physics

Card 1/1 Pub. 22 - 19/54

Authors : Yermolayev, V. L.

Title : Extinguishing and changing the time of luminescence during sensitized phosphorescence of aromatic compounds

Periodical : Dok. AN SSSR 102/5, 925-928, June 11, 1955

Abstract : An experimental study was conducted of the mechanism of sensitized phosphorescence and the determination of time (τ) the luminescence of an [illegible]

Tables; graphs.

Institution : .....

Presented by : Academician A. N. Terenin, December 2, 1954

TERENIN, A.N.; YERMOLAYEV, V.L.

Intermolecular transfer of energy occurring in sensitized luminescence. Izv. AN SSSR. Ser.fiz. 20 no.4:382 Ap '56. (MLRA 10:1)
(Luminescence) (Fluorescence)

Yermolayev VL

USSR/Optics - Physical Optics

K-5

Abs Jour : Referat Zhur - Fizika, No 5, 1957, 12962

Author : Yermolayev, V.L.

Inst :

Title : Sensitized Phosphorescence of Aromatic Compounds (Energy Transfer from Triplet to Triplet Level).

Orig Pub : Izv. AN SSSR, ser. fiz., 1956, 20, No 5, 514-519

Abstract : A quantitative investigation was made of the phenomenon of sensitization of phosphorescence, connected with radiationless migration of the energy of electron excitation between the molecules, with the excitation of the triplet level. For more details see Abstract 12961.

Card 1/1

TERMOLAYEV, V. L.

USSR/Physics - Luminescence

Card 1/1 Pub. 118 - 2/7

Authors : Terenin, A. N., and Yermolayev, V. L.

Title : Intermolecular transfer of energy in the phenomenon of sensitized luminescence of organic systems (part II)

Periodical : Usp. Fiz. nauk, 58/1, 37-68, Jan 1956

Abstract : The intermolecular transfer of energy observed in the phenomenon known as the sensitization of luminescence of organic systems is discussed. Two types of energy transfer are considered: kinetic and inductive. Various cases are analyzed in which sensitized luminescence and the energy transfer were observed. Fifty-seven references: 8 Germ., 21 USA, 28 USSR (1927-1955). Graphs; diagrams.

Institution : .....

Submitted : .....

YERMOLAYEV, V.I., KRYUCHKOV, V.V., SMEKALOV, M.M.

Modern signaling, central control and block system equipment used in underground electromotive transport. Priborostroenie no.12:2-5 D '56. (MLRA 10:1)
(Subways--Signaling) (Automatic control)

AUTHORS: Dmitriyevskiy, O. D., Yermolayev, V. L. 20-114-4-20/63
Terenin, A. N., Member of the Academy

TITLE: Direct Measurement of the Life of Excited Molecules of Chlorophyll and Analogous Pigments in Different Media (Pryamyye izmereniya vremeni zhizni vozbuzhdennykh molekul khlorofilla i analogichnykh pigmentov v razlichnykh sredakh)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 114, Nr 4, pp. 751-753 (USSR)

ABSTRACT: In order to determine this life τ the authors measured the duration of fluorescence by means of the phase fluorimeter by A. M. Bonch-Bruyevich et al. whose resolving power in time is 2.10^{-11} sec. Other devices used in these investigations and the errors of measurement are also shortly discussed. Fluorescence was excited by the mercury line 436 mμ. Observation was effected through the light filter KC-10 with a thickness of 4 mm. The concentration of the solutions always remained below 10^{-5} mol/l. The values obtained for the solutions of chlorophyll and related pigments in various solvents at + 20°C are summarized in a table. The here measured life of the excited singlet state of chlorophyll markedly differs from those values which were obtained by indirect methods from the polarization

Card 1/2

Direct Measurement of the Life of Excited Molecules of Chlorophyll and Analogous Pigments in Different Media 2c 114-4-20/63

of the fluorescence and from the integral of the absorption band. The decay time of the fluorescence of the pigments depends only little on the solvent. For chlorophyll b it is approximately twice as small as for chlorophyll a, which is connected with the different quantitative yield of fluorescence. In phtalocyanides life is somewhat longer than in pheophitines of the corresponding metals. Hematoporphinin has the longest decay time. If a Zn-atom is introduced into the pigment instead of a Mg-atom, the decay time of the fluorescence is reduced to about half of its former length. A table contains the here obtained data on the decay time of the fluorescence of chlorophyll in natural media. The values thus obtained are about 3-8 times as short as in molecular solutions. In the living leaf τ depends on the intensity of exposure to light. The reduction of τ and the reduction of fluorescence yield in the living leaf are largely due to the high concentration of pigments under these conditions. There are 2 tables and 6 references, 1 of which is Soviet.

SUBMITTED: May 31, 1957

Card 2/2

YERMOLAYEV, V.L.; ALESHIN, V.G.; SAYENKO, Ye.A.

Determining the velocity constants of energy transfer in chelate complexes of rare earth ions. Dokl. AN SSSR 165 no.5:1048-1051 D '65. (MIRA 19:1)

1. Submitted April 26, 1965.

YERMOLAYEV, V.L., Cand Phys-Math Sci--(diss) "Sensitized phosphorescence of organic compounds at low temperature." [Len], 1958. 10 pp (State Order of Lenin Optical Inst im S.I.Vavilov), 150 copies (KL,47-58,129)

YERMOLAYEV, V.L.; KOTLYAR, I.P.; SVITASHEV, K.K.

Internal conversion from the fluorescent to the phosphorescent level in naphthalene derivatives. Izv.AN SSSR.Ser.fiz. 24 no.5:492-495 My '60. (MIRA 13:5)
(Naphthalene--Optical properties) (Luminescence)

24(4) SOV/51-6-5-14/34

AUTHOR: Yermolayev, V.L.

TITLE: Dependence of the Probability of Energy Transfer in Sensitized Phosphorescence on the Oscillator Strength of a Triplet-Singlet Transition in the Molecule of an Energy Acceptor (Zavisimost' veroyatnosti perenosa energii pri sensibilizovannoy fosforestsentsii ot sily ostsillyatora triplet-singuletnogo perekhoda v molekule aktseptora energii)

PERIODICAL: Optika i Spektroskopiya, 1959, Vol 6, Nr 5, pp 642-647 (USSR)

ABSTRACT: The paper was presented at the Sixth Conference on Luminescence, Leningrad, 1958. In 1952 Terenin and the author (Refs 1, 2) discovered sensitized phosphorescence of aromatic compounds. Later (Refs 3-5) it was found that a resonance transfer of energy with direct excitation of a triplet level in the energy acceptor takes place in sensitized phosphorescence. The present paper describes studies of the effect of the oscillator strength of triplet-singlet transitions in the energy acceptor on the probability of energy transfer and consequent quenching. For this purpose acceptors with similar phosphorescence spectra and widely differing decay constants were used. They were: naphthalene, 1-chloronaphthalene, 1-bromonaphthalene and 1-iodonaphthalene. Their

Card 1/4

Dependence of the Probability of Energy Transfer in Sensitized Phosphorescence on the Oscillator Strength of a Triplet-Singlet Transition in the Molecule of an Energy Acceptor

phosphorescent properties are listed in Table 1: the height of the triplet level, in cm^{-1}, is given in col 2; the decay constant, in sec, is given in col 3; the quantum yield is given in col 4. Experiments showed that phosphorescence of benzophenone or benzaldehyde was quenched to the same extent by any one of the four acceptors listed above (at the same acceptor concentration of 0.32 mole/litre at -195°C, see Table 2). This is shown clearly in Fig 1 where the continuous curve represents quenching (lowering of intensity of phosphorescence) of benzophenone by naphthalene (circles) and 1-bromonaphthalene (crosses) as a function of the acceptor concentration. Although the oscillator strengths of the triplet-singlet transitions in naphthalene and 1-bromonaphthalene differ by a factor of about 100 their quenching action is represented by the same curve. This is also true of the decrease of the phosphorescence decay constant τ, due to naphthalene and 1-bromonaphthalene in benzophenone. The effect on τ is represented by the dashed curve in Fig 1: the effect of naphthalene is shown by dots and that of 1-bromonaphthalene by triangles. These facts contradict directly one variant of the theory of radiationless energy transfer (Galanin, Förster, Dexter). This variant predicts

Dependence of the Probability of Energy Transfer in Sensitized Phosphorescence on the Oscillator Strength of a Triplet-Singlet Transition in the Molecule or an Energy Acceptor

strong dependence of the probability of energy transfer between donors and acceptors (and the consequent quenching of the donor phosphorescence) on the probability of radiative transitions (oscillator strengths) in the acceptor. It was also found that the quantum yield of sensitized phosphorescence (defined as the ratio of I_A, the number of quanta emitted by the acceptor, to I_D, the number of quanta emitted by the donor) increases more slowly along the acceptor series from napnthalene to 1-iodonaphthalene than predicted by the theory mentioned above (Fig 2). The several predictions mentioned above stem from an assumption that energy is transferred by an inductive interaction of electromagnetic fields of the molecules taking part in the transfer process. Consequently this mechanism must be abandoned in favour of another variant which ascribes energy transfer to exchange-resonance effects which explain satisfactorily the observed facts. Acknowledgments are made to

Dependence of the Probability of Energy Transfer in Sensitized Phosphorescence on the Oscillator Strength of a Triplet-Singlet Transition in the Molecule of an Energy Acceptor

Academician A.N. Terenin who suggested the work and directed it.
There are 2 figures, 3 tables and 28 references, 16 of which are Soviet, 4 French, 4 German and 4 English.

SUBMITTED: July 20, 1958

S/053/60/071/01/05/011
B006/B011

24.3500

AUTHORS: Yermolayev, V. L., Terenin, A. N.

TITLE: Intramolecular Energy Transfer on Triplet Levels

PERIODICAL: Uspekhi fizicheskikh nauk, 1960, Vol. 71, No. 1, pp. 137-141

TEXT: The present paper is a continuation of a number of previous investigations (Refs. 1-7), that had dealt with similar problems. It was the aim of the investigation under review to show that an intramolecular energy transfer from the triplet level of a carbonyl group to a triplet level of diphenyl- or naphthyl group is possible. For this purpose, the authors investigated the spectra and the duration of phosphorescence in a series of diphenyl ketones, naphthyl ketones, and aldehydes. The clearest results were obtained with phenyl-4-diphenyl ketone (phenyl-4-benzophenone), the absorption spectrum of which at -196°C in ethanol ether (mixture 2:1) is shown in Fig. 1. The benzophenone spectrum taken under the same conditions, is also shown for a comparison. Phenyl diphenyl ketone exhibits two bands; a scheme of the electron level of this compound is shown in Fig. 3. Numerous details are given, concerning the spectra that were

Card 1/2

Intramolecular Energy Transfer on Triplet Levels

S/053/60/071/01/05/011
B006/B011

examined. Fig. 2 shows the phosphorescence spectra of benzophenone, phenyl-4-diphenyl ketone and p-oxydiphenyl in ether, taken under the same conditions as the absorption bands. The duration of phosphorescence of these three compounds was $4.7 \cdot 10^{-3}$ sec, 0.3 sec, and 2.5 sec, respectively. Table 1 contains data on phenyl diphenyl ketone and a number of other carbonyl derivatives of diphenyl, concerning the position of singlet- and triplet level, extinction period, and phosphorescence quantum yield. Three of the compounds investigated were synthesized by I. Ya. Postovskiy. Table 2 offers the same data for some carbonyl derivatives of naphthalene, Fig. 4 shows the phosphorescence spectra of 1-chloronaphthalene, and 2-naphthyl methyl ketone. All data and all spectra refer to mixtures with ethanol ether at -196°C. Investigations show that the luminescence of carbonyl derivatives of diphenyl and naphthalene can be ascribed to an intramolecular excitation energy transfer. This explains the lack of fluorescence in these compounds. The naphthalene derivatives were prepared by A. I. Shattenshteyn, V. K. Matveyev, and A. T. Troshchenko. There are 4 figures, 2 tables, and 10 Soviet references.

Card 2/2

YERMOLAYEV, V.L.

Luminescence of simple benzene derivatives. Part 1. Aromatic amines. Opt.i spektr. 11 no.4:492-497 O '61. (MIRA 14:10)
(Benzene derivatives—Spectra)

YERMOLAYEV, V.L.

Spheres of action of quenching in the case of energy transfer between triplet levels. Dokl. AN SSSR 139 no.2:348-350 Jl '61. (MIRA 14:7)

1. Predstavleno akademikom A.N. Terenin'ym.
(Phosphorescence) (Nuclei, Atomic)

S/051/62/013/001/006/019
E039/E420

AUTHOR: Yermolayev, V.L.

TITLE: Measurement of the quantum yields of sensitized phosphorescence as a method of studying quenching processes at the triplet level of organic molecules

PERIODICAL: Optika i spektroskopiya, v.13, no.1, 1962, 90-95

TEXT: The quantum yields of sensitized and normal phosphorescence are measured for a series of aromatic molecules in solid solution at 77°K. It is shown that the quantum yields of sensitized phosphorescence for all the investigated combinations is independent of the concentration of acceptor and donor energies. Results obtained are explained on the assumption that the non-radiating transfer of energy up to the triplet level is accompanied by quenching and that all the quenching inside aromatic molecules in solid solution is concentrated in the triplet state. Measurements of quantum yield of sensitized phosphorescence are able to be used to determine quenching in triplet levels of donor or acceptor energy. Quantum yields are determined for values of acceptor energy

S/051/62/013/001/006/019
E039/E420

Measurement of the quantum ...

concentrations of 6.3×10^{-2} to 4.8×10^{-1} mole/litre. A minimum quantum yield of 0.070 is observed for carbazole + naphthalene and a maximum quantum yield of 0.73 for phenanthrene + 1-chloro-naphthalene. There are 1 figure and 3 tables.

SUBMITTED: May 25, 1961

Card 2/2

TERENIN, A.N.; YERMOLAYEV, V.L.

Inactivation of the triplet state in aromatic molecules.
Izv. AN SSSR. Ser. fiz. 26 no.1:21-29 Ja '62. (MIRA 15:2)
(Aromatic compounds)
(Molecular dynamics)

YERMOLAYEV, V.L.; SVESHNIKOVA, Ye.B.; SHIGORIN, D.N.

Nonradiative energy transfer between the triplet and singlet states in organic molecules; discussion of A.N.Terenin and V.L. Ermolaev's report "Inactivation of the triplet state in aromatic molecules". Izv. AN SSSR. Ser. fiz. 26 no.1:29-31 Ja '62. (MIRA 15:2)

(Organic compounds)
(Molecular dynamics)

ARISTOV, A.V.; YERMOLAYEV, V.L.; LEVSHIN, V.L.; MOKEYEVA, G.A.; CHERKASOV, A.S.; SHIROKOV, V.I.

Boris IAkovlevich Sveshnikov; obituary. Usp. fiz. nauk 81 no.1: 201-210 S '63. (MIRA 16:12)

L 10162-63 EPF(c)/EWT(m)/EDS--ASD--Pr-4--
RM/WW/MAY

ACCESSION NR: AP3000312 S/0048/63/027/005/0617/0622

AUTHOR: Yermolayev, V. L.

TITLE: Modes of internal deactivation of excited aromatic molecules in vitreous solutions [Report: Eleventh Conference on Luminescence held in Minsk 10-15 Sept. 1962]

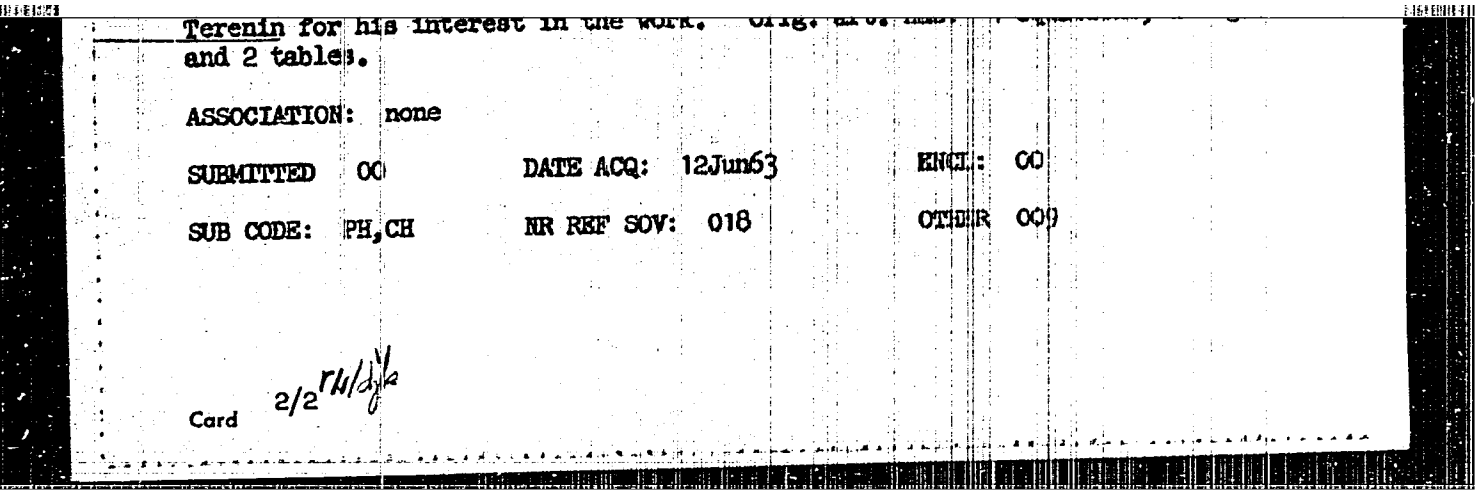
SOURCE: Izvestiya AN SSR.Seriya fizicheskaya, v. 27 no. 5, 1963, 617-622

TOPIC TAGS: molecular luminescence, molecular states, diphenyl, naphthalene

ABSTRACT: With a view to elucidating the modes of de-excitation of molecules in frozen solutions, the fluorescence and phosphorescence spectra of ordinary and fully deuterated [illegible]

as if it were calculated. Analysis of the available data indicates that in most

Card 1/2



Terenin for his interest in the work. Orig. art. has: [illegible]
and 2 tables.

ASSOCIATION: none

SUBMITTED 00 DATE ACQ: 12Jun63 ENCL: 00

SUB CODE: PH,CH NR REF SOV: 018 OTHER: 000

Card 2/2

L 10177-63 EWT(1)/BDS--AFFTC/ASD

ACCESSION NR: AP3002305 S/0053/63/080/001/0003/0040

AUTHOR: Yermolayev, V. L. 50

TITLE: Transfer of energy in organic systems with the participation of the triplet state. 3. Solid solutions and crystals

SOURCE: Uspekhi fizicheskikh nauk, v. 80, no. 1, 1963, 3-40

TOPIC TAGS: triplet level transitions, glasslike organic systems, crystalline organic systems, concentration quenching, organic phosphorescence

ABSTRACT: This article, a thorough and detailed review of recent developments in the field of energy transfer in organic systems, is the third in a series. The first (by A. N. Terenin) and the second (by Terenin and Yermolayev), were published in 1951 and 1956, respectively. The present paper deals with the study of nonradioactive electron excitation energy transfer between the triplet levels of organic molecules in glasslike and crystalline substances at low temperatures. The text is divided into three parts. Concentration quenching, decrease in quenching time, and the concentration quenching of Alpha and Beta phosphorescence

Card 1/2

L 10177-63
ACCESSION NR: AP3002305

are discussed in the first part; sensitized phosphorescence of organic compounds in the second; and the transfer of energy by triplet levels in organic crystalline media in the third. Orig. art. has: 15 figures, 9 formulas, and 12 tables.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 12Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 067 OTHER: 054

Card 2/2

YERMOLAYEV, V.L.; SVESHNIKOVA, Ye.B.

Inductive resonance energy transfer from aromatic molecules in the triplet state. Dokl. AN SSSR 149 no.6:1295-1298 Ap '63. (MIRA 16:7)

1. Predstavleno akademikom A.N.Tereninym.
(Aromatic compounds) (Quantum theory)

ACCESSION NR: AP4020978 S/0051/64/016/003/0548/0548

AUTHOR: Yermolayev, V.L.

TITLE: Triplet-triplet energy transfer between identical molecules in solid solutions at 90°K

SOURCE: Optika i spektroskopiya, v.16, no.3, 1964, 548

TOPIC TAGS: energy transfer, energy migration, triplet-triplet transfer, phosphorescence quenching, benzophenone, naphthalene, triplet level

ABSTRACT: The phenomenon of triplet-triplet energy transfer between different molecules was discovered by the author in collaboration with Terenin in 1952 (A.N.Terenin and V.L.Yermolayev, DAN SSSR 85,547,1952) and is known to occur in solid solutions, liquid solutions and crystals. The purpose of the present study was to determine whether it can occur between like (identical) molecules in solid solutions at 90°K. The experiments consisted in measuring the quenching of the phosphorescence of benzophenone (donor) in the presence of naphthalene (acceptor) in ether-alcohol solutions at different concentrations (from 10^{-2} to 1.17 M) of the benzophenone. The observed variation in quenching is attributed to energy migration between the

Card 1/2

ACCESSION NR: AP4020978

triplet levels of the donor. "In conclusion, I desire to express my gratitude to A.N.Terenin for his interest in the work and Kh.S.Bagdasar'yan for stimulating discussions."

ASSOCIATION: none

SUBMITTED: 28Jan64 DATE ACQ: 02Apr64 ENCL: 00

SUB CODE: PH NR REF SOV: 003 OTHER: 000

2/2

Card

YERMOLAYEV, V.L.;

Width of luminescence spectra and Stokes's losses in transitions from fluorescent and phosphorescent levels of aromatic compounds. Opt. i spektr. 16 no. 4:704-705 Ap '64. (MIRA 17:5)

L 00988-66 EWT(l)/EWT(m)/T IJP(c) DS

ACCESSION NR: AP5020780 UR/0048/65/029/008/1266/1270

AUTHOR: Yermolayev, V. L.

TITLE: Triplet-triplet energy transfer and its applications in luminescence and photochemical reactions

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 29, no. 8, 1965, 1266-1270

TOPIC TAGS: intermolecular energy transfer, triplet triplet transfer, organic molecule, luminescence, energy decay, photochemical reaction, rare earth chelate, laser

ABSTRACT: Soviet and Western research data, including 1964 data, on triplet-triplet energy transfer in organic molecules were reviewed and discussed. New data obtained by the author on triplet-triplet energy transfer between identical molecules in solid (frozen) solutions were given and discussed. The rapidly growing number of publications on the subject in the past few years (since 1962) was explained in terms of possibilities for the application of triplet-triplet energy transfer to the study of the decay of electronic excitation energy in organic molecules, mechanism of photochemical reactions, and rare-earth chelate lasers. New experimental data were reported on concentration quenching of the phosphorescence of a benzophenone-donor by

Card 1/2

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ACCESSION NR: AP5020780

a naphthalene-acceptor in alcohol-ether solution at 90K. Recently, preliminary data on this subject were published (Yermolayev, V. L. Optika i spektroskopiya, v. 16, no. 3, 1964, 548). The new data included changes in the phosphorescence spectrum, quantum yield, and quenching of the phosphorescence of a benzophenone-donor at high donor concentrations. These changes were explained mainly as the effect of the radiationless triplet-triplet energy transfer between identical donor molecules in solutions. This effect is considered important for biological and organic scintillators studies. In conclusion, the author expressed the belief that triplet-triplet transfer must play a significant part in photobiological processes. This paper was presented at the Thirteenth Conference on Luminescence (Organic Phosphors and Molecular Luminescence) held June 25—July 1, 1964 in Kharkov. Orig. art. has: 2 figures and 3 formulas. [JK]

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: NP, OP

NO REF SOV: 012 OTHER: 017 ATD PRESS: 4069

Card 2/2

L 11088-66 EWT(l)/T IJP(c) GS/AT

ACC NR: AT5023434 SOURCE CODE: UR/0000/65/000/000/0100/0105

38
B+1

AUTHOR: Yermolayev, V. L. 44,55

ORG: none

TITLE: Various types of nonradiative energy transfer from aromatic molecules in triplet state

SOURCE: Simpozium po elementarnym protsessam khimii vysokikh energiy. Moscow, 1963. Elementarnyye protsessy khimii vysokikh energiy (Elementary processes of the chemistry of high energies); trudy simpoziuma, Moscow, 1965, 100-105

44,55

TOPIC TAGS: particle interaction, excited state, phosphorescence, particle collision, molecular interaction

21,44,55

ABSTRACT: Various types of nonradiative energy transfer in solid solutions involving aromatic molecules in the triplet state are discussed. The first type occurs during the sensibilized phosphorescence of organic compounds in glassy solution at low temperatures. The process of deactivation occurs here according to the triplet-triplet scheme

$$^3r_D + {}^1r_A \rightarrow {}^1r_D + {}^3r_A$$

where A is acceptor and D is donor. The probability of the triplet-triplet energy transfer is independent of the singlet-triplet transformation of the acceptor mole-

Card 1/2

L 11088-66

ACC NR: AT5023434 O

cule. The triplet-triplet type energy transfer (nonradioactive) conforms to the Wigner rule of preservation of total spins of the donor and the acceptor during the energy transfer act and the nonradioactive transfer of electronic excitation energy from organic molecules in the triplet state follows the inductive-resonance mechanism. In the case of this triplet-singlet transfer the acceptor molecule transforms into the excited singlet state according to

$$^3\Gamma_D + {}^1\Gamma_A \rightarrow {}^1\Gamma_D + {}^1\Gamma_A$$

The triplet-singlet type energy transfer need not conform to Wigner's rule. This indicates that in the absence of photochemical reaction the internal decay of the electronic excitation energy of aromatic molecules occurs via triplet state. Orig. art. has: 2 figures.

SUB CODE: 20/ SUBM DATE: 23Feb65/ ORIG REF: 007/ OTH REF: 002

Card 2/2

AUTHOR: Yermolayev, V. L. 44,55

SOURCE CODE: UR/0000/65/000/000/0158/0159

ORG: none

TITLE: Triplet states of organic compounds in energy transfer

SOURCE: Simpozium po elementarnym protsessam khimii vysokikh energiy. Moscow, 1963. Elementarnyye protsessy khimii vysokikh energiy (Elementary processes of the chemistry of high energies); trudy simpoziuma. Moscow, 1965, 158-159

TOPIC TAGS: particle interaction, excited state, excited electron state, particle collision

ABSTRACT: The mechanism of energy transfer between organic molecules in solid solutions, liquid solutions and crystals is discussed in terms of resonance theory. In solid solutions, if the Wigner rule of preservation of total spin is satisfied, the energy is transferred from an organic molecule in a triplet state to another in a singlet state and is in accord with the exchange-resonance mechanism

$$^3\Gamma_D + {}^1\Gamma_A \rightarrow {}^1\Gamma_D + {}^3\Gamma_A$$

where D is a donor and A is an acceptor. This "triplet-triplet" mechanism is operative at a donor concentration in solid solution of $5 \cdot 10^{-2}$-$5 \cdot 10^{-1}$ moles/l and for the

Card 1/2

ACC NR: AT5023441

intermolecular distance of 10-15 Å. An inductive-resonance mechanism is operative and the Wigner rule is not followed when the intermolecular distance (donor-acceptor) in the solid solution is 25-60 Å. In this case, the acceptor molecule converts into an excited singlet state according to:

$$^3\Gamma_D + {}^1\Gamma_A \rightarrow {}^1\Gamma_D + {}^1\Gamma_A$$

In the oxygen-free liquid solution, the energy transfer is of a triplet-triplet type and follows the exchange resonance mechanism. In liquid solutions the life of organic molecules in triplet state is 10^{-6}-10^{-3} sec. In case of benzene, triplet-triplet type energy transfer proceeds at an appreciable rate at an acceptor concentration of 10^{-6}-10^{-5} moles/l (293°K, $[O_2] = 0$, life of the donor triplet state = 10^{-3} sec). The problems of triplet-singlet type energy transfer in liquid solutions and of the triplet-triplet type energy transfer in crystals remain unsolved.

SUB CODE: 20/ SUBM DATE: 23Feb65/ ORIG REF: 001/ OTH REF: 000

jw

Card 2/2

L 13631-66 EWT(m)/EWP(j)/EWP(t)/EWP(b) IJP(c) JD/JG/RM

ACC NR: AP6002421 SOURCE CODE: UR/0020/65/165/005/1048/1051

AUTHOR: Yermolayev, V. L.; Aleshin, V. G.; Sayenko, Ye. A.

ORG: none

TITLE: Determination of the energy transport velocity constants in chelates of complex rare-earth ions

SOURCE: AN SSSR. Doklady, v. 165, no. 5, 1965, 1048-1051

TOPIC TAGS: rare earth element, nonradiative transition, luminescence quenching, electron energy level

ABSTRACT: The authors describe a method for the determination of the rate constant of nonradiative transfer of electron energy from a ligand to a rare-earth molecule for complexes of dibenzoylmethanate (DBM) with Sm^{3+} and Eu^{3+} and for acetylacetonate (AA) with Sm^{3+}, Eu^{3+}, Tb^{3+}, and Dy^{3+}. The method is based on the competition between the intramolecular ligand-rare earth transfer and the intermolecular energy transfer over the triplet states of organic ligand-quencher (acceptor) compounds. The quenchers used were naphthalene for AA and acridine, anthracene, 1,2-benzanthracene, and pyrene for DBM. The rare-earth complex luminescence was excited outside the absorption band of the quencher (3340 Å for AA and 4050 Å for DBM). The measurements were made in toluol at 293K. Plots are presented of the electronic levels in triplet-triplet quenching, of the phosphorescence spectra of the ligand and of the rare earth and of the behavior of the luminescence quenching agent. The results

Card 1/2

UDC: 535.373.2

L 13631-66

ACC NR: AP6002421

show that the intermolecular triplet-triplet energy transfer between organic molecules has a higher rate constant than the ligand--rare earth transition, which has a higher order of forbiddenness. The application of the results to an analytic determination of the content of rare earths by means of the luminescence of rare-earth-complex residues is briefly discussed. Authors are grateful to Academician A. N. Terenin for interest, and to A. V. Karyakin, V. A. Arkhangel'skaya, and B. I. Maksakov for supplying the rare-earth elements. Orig. art. has: 3 figures. [02]

SUB CODE: 20/ SUBM DATE: 16Apr65/ ORIG REF: 003/ OTH REF: 012/ ATD PRESS: 4187

Card 2/2

ACC NR: AP7004147 SOURCE CODE: UR/0051/67/022/001/0165/0167

AUTHOR: Yermolayev, V. L.; Sveshnikova, Ye. B.; Sayenko, Ye. A.

ORG: none

TITLE: Study of the degradation of electron excitation in organic molecules in liquid solution by the method of triplet-triplet transfer to rare earth chelates

SOURCE: Optika i spektroskopiya, v. 22, no. 1, 1967, 165-167

TOPIC TAGS: energy transfer, photoluminescence, fluorescence, excited electron state, aromatic hydrocarbon, aromatic ketone, aromatic ether, organoeuropium compound, chelate compound, NAPHTHALENE

ABSTRACT: The controversial mechanism of degradation of excitation energy in organic molecules, such as 2-acetonaphthone, 2-methoxynaphthalene, or naphthalene, in liquid solution has been studied by the method of triplet-triplet transfer to europium tris-thenoyltrifluoroacetonate-1, 10-phenanthroline. The nonradiative energy fraction which degrades on the triple level of the organic donor molecule was determined by two procedures. Following the first procedure, the luminescence intensity of the evacuated binary solution of the organic donor molecule and chelate was compared to that of an identical but nonevacuated solution. The difference between the luminescence intensity of evacuated and nonevacuated solutions, $I_{ev} - I_{nonev}$, was equated to the intensity I_{tt} due to the energy transfer on triplet levels, under operating conditions excluding the donor to chelate energy transfer on singlet levels and the

Card 1/2 UDC: 535.373.2

ACC NR: AP7004147

reabsorption of the donor fluorescence by the chelate. The experimental values of $(I_{ev} - I_{nonev}) \times I_{nonev}^{-1}$, which are the measure of the fraction of donor molecules in the triplet state, were found nearly equal to the values of $\varepsilon_D C_D (1 - q_{fl}) \varepsilon_{ch}^{-1} C_{ch}^{-1}$, where ε and C are molar absorption coefficients and concentrations of donor and chelate and q_{fl} is the quantum yield of fluorescence of the donor. In the second procedure, the luminescence intensity of the evacuated binary solutions was compared to that of the solution of the chelate alone on excitation with a 313 nm source. Under given conditions, the ratio $(I_{ev} - I_{nonev})(I_{ch} - I_{nonev})^{-1}$ was equated with the fraction of donor molecules in the triplet state, q_{3r}. This value was found nearly equal to $1 - q_{fl}$. The conclusion was drawn from both experiments that the energy degradation in the aromatic molecules studied in liquid solution proceeds exclusively via the triplet state. Thanks are expressed to A. N. Terenin. Orig. art. has: 1 table and 1 figure. [JK]

SUB CODE: 07, 20/ SUBM DATE: 16Jun66/ ORIG REF: 004/ OTH REF: 004/

Card 2/2

GREDITOR, M.A., inzh.; YERMOLAYEV, V.M., inzh.

Automatic computer of the amount of wood in cubic meters. Mekh. i avtom.proiz. 14 no.6:48-49 Je '60. (MIRA 13:7)
(Electronic digital computer)

S/147/61/000/004/011/021
E025/E120

11.7200

AUTHORS: Yermolayev, V.M., and Talantov, A.V.

TITLE: Investigation of the effect of pressure on the speed of propagation of flames in the turbulent flow of a homogeneous mixture

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Aviatsionnaya tekhnika, no.4, 1961, 82-93

TEXT: The investigation of the dependence of the fundamental characteristics of burning on pressure are of great practical value because this problem is connected with the known worsening of the efficiency of the combustion chambers at great heights. The published investigations into the effect of pressure on burning were carried out for axially symmetrical flows in a small range of variation of the fundamental parameters. In most cases the speed of flow and composition of the mixture were not varied. In the present investigation the speed of propagation of the flame has been varied from 20 to 80 m/sec, the composition of the mixture has been varied from 1 to 1.5,

Card 1/4

the pressure from 0.35 to 1.4 kg/cm^2 and the temperature was equal to 423 °K. To obtain the best approximation to the conditions of burning in an engine the experiment was carried out on a flow bounded by walls in a chamber of constant section with forced turbulence of the flow. The combustion chamber was a tube of square section 50 x 50 mm of length 1700 mm, cooled externally by water. A very detailed schematic diagram of the experimental arrangements is given. The values of speed of propagation of the flame in the turbulent flow for various speeds of the flow, mixtures and pressures were obtained, and from these were constructed graphs giving the relation between the speed of propagation of the flame and the pressure for various mixtures and flow speeds. A comparison of the nature of the relation between the speed of propagation of the flame and the pressure for various mixtures and flow speeds was made by the use of dimensionless flame propagation velocities and pressure ratios. The effects due to lengthening and shortening the flame are discussed. The following conclusions are arrived at:

Investigation of the effect of ... S/147/61/000/004/011/021
E025/E120

1) The values and nature of the speed of propagation of a flame are approximately the same in a turbulent flow bounded by walls and in open turbulent flow. 2) The speed of propagation of the flame is proportional to the 0.8-th power of the pulsation velocity, taking account of the dependence of the latter on the pressure. 3) Damping of the turbulence is responsible for varying estimates of the effect of the pressure on the speed of the flame for different speeds of flow and mixtures. Hence it is necessary to calculate the speed of propagation of the flame taking account of the normal and pulsation velocities and their dependence on pressure and damping. 4) The speed of propagation of the flame in a closed turbulent flow is in good agreement with theory when the effect of damping of the turbulence is eliminated. 5) The decrease in the speed of propagation of the flame with fall of pressure is one of the causes of decreased efficiency of the processes in the combustion chambers of primary engines in high altitude conditions.
There are 10 figures.

Card 3/4

Investigation of the effect of ... S/147/61/000/004/011/021
E025/E120

ASSOCIATION: Kazanskiy aviatsionnyy institut, Kafedra teorii aviadvigateley
(Kazan' Aviation Institute, Department of Theory of Aircraft Engines)

SUBMITTED: April 3, 1961

Card 4/4

YERMOLAYEV, V.M.; TALANTOV, A.V.

Investigating the effect of pressure on the length of the combustion zone in a closed turbulent flow of a uniform mixture. Izv.vys.ucheb.zav.; av.tekh. 5 no.3:143-156 '62. (MIRA 15:9)
(Combustion)

ISKHAKOV, G.Kh., inzh.; YERMOLAYEV, V.M.

Conference on improvement of efficiency in the electric equipment industry in the Urals. Vest. elektroprom. 34 no.2:76-77 F '63. (MIRA 16:2)
(Electric equipment industry—Congresses)

YERMOLAYEV, V.M.; TALANTOV, A.V.

Rate of flame propagation in an open and limited flow of homogeneous mixture. Izv.vys.uchseb.zav.;av.tekh. 7 no.2:134-141 '64. (MIRA 17:9)

YERMOLAEV, V. K.

PHASE I Treasure Island Bibliographic Report

BOOK Call No.: TN871.M37

Authors: ERMOLAEV, V. K. and MARAMZIN, A. V.

Full Title: FOREMAN OF STRUCTURAL WELL DRILLING

Transliterated Title: Master strukturnogo burenila

Publishing Data

Originating Agency: None

Publishing House: State Scientific-Technical Publishing House of Oil and Mineral Fuel Literature. Leningrad Branch. (Gostoptekhizdat)

Date: 1952 No. pp.: 318 No. copies: 7,000

Editorial Staff

Editor: Gridin, V. K. Tech. Ed.: None

Ed.-in-Chief: Permingv, S. V. Appraiser: None

Text Data

Coverage: The book contains elementary data on geological structures, construction of derricks, arrangement of equipment, types and quality of drilling tools, and characteristics of various materials (metals, lubricants, transmission belts and transmission cables, cement, lumber, etc.) used in well drilling. The practical methods of drilling wells for geological surveys (mapping), structural, and prospecting drilling are described; also, methods of computing simple work problems and rates of drilling through various strata.

Purpose: A textbook for well drilling foremen and personnel engaged in surveying and prospecting.

Facilities: None

No. Russian References: 11

Available: Library of Congress

YERMOLAYEV, V.M.; MARAMZIN, A.V.; KOVALEVA, A.A., inzhener, vedushchiy redaktor; POLOSINA, A.S., tekhnicheskiy redaktor.

[Structural boring; practical manual for workmen] Strukturnoe burenie; prakticheskoe posobie dlia rabochikh. Moskva, Gos. nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, 1954. 138 p. (MLRA 8:1)

(Boring)

Yermolayev, Vasiliy Mikhaylovich

MARAMZIN, Aleksandr Vasil'yevich; YERMOLAYEV, Vasiliy Mikhaylovich; VITTORF,M.V., redaktor; PERMINOV,S.V., redaktor; GERSHAD'YEVA, I.M., tekhnicheskiy redaktor

[Drilling structural and exploratory wells] Burenie strukturno-poiskovykh skvashin. Leningrad, Gos.nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, 1955. 363 p. (MLRA 9:3)
(Boring machinery) (Oil well drilling)

MARAMZIN, Aleksandr Vasil'yevich; YERMOLAYEV, Vasiliy Mikhaylovich [deceased]; SHEVTSOVA, E.M., ved. red.

[Boring structural prospecting holes] Burenie strukturno-poiskovykh skvazhin. Izd.2., isp. i dop. Leningrad, Nedra, 1964. 390 p. (MIRA 17:9)

LYUBCHENKO, A.P.; YERMOLAYEV, V.N.

Effect of cerium on the self-diffusion of iron. Fiz. met. i metalloved. 14 no.1:157-160 Jl '62. (MIRA 15:7)
(Iron—Metallography)
(Cerium)

SHNYAKIN, A.I., insh.; YERMOLAYEV, V.N., insh.

Technology of blast furnace gas purification and the design of scrubbers. Stal' 23 no.2:176-178 F '63. (MIRA 16:2)

1. Magnitogorskiy metallurgicheskiy kombinat.
(Gases--Purification)
(Scrubber (Chemical technology))

YERMOLAYEV, V.P.

ERMOLAEV, V. P., and N. P. KONOCHUK.

Pamiatka normirovshchiku-stroiteliu. Moskva, 1948. 70 p., forms.
At head of title: Nauchno-issledovatel'skii aerodromnyi institut VVS VS.
Title tr.: Instructions of experts in setting construction work standards.

TL725.2.K6

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955.

YERMOLAYEV, V.P. EXCERPTA MEDICA Sec 9 Vol 13/2 Surgery Feb 59

868. (316) EXPERIMENTAL PARENTERAL PROTEIN NUTRITION IN SURGICAL PATIENTS (Russian text) - Ermolaev V. P. - KHIRURGIJA 1958, 2 (97-102) Graphs 3 Tables 2

Data concerning metabolism in patients following operations on the gastrointestinal tract and in burned patients are presented. Pronounced negative nitrogen balance (7-12 g.) was revealed in the postoperative period. In burned patients and in cases with postoperative complications nitrogen balance equalled from 30 to 35 g. in 24 hr. There was a loss of weight and reduced content of protein in the plasma. Pro-

868

tein was administered parenterally in 20 postoperative cases and in 5 cases with burns, and 55 i.v. injections were carried out. In 12 cases untoward side-reactions were observed, which were severe in 5. Aminopeptide - a new preparation of heterogenic protein, fermentative hydrolysate of whole animal blood - was investigated thoroughly. It was tested clinically in 174 patients (85 postoperative and 89 burn cases). Aminopeptide was administered i.v., i.m. and s.c. in a dose of 800-1,500 ml. (18 to 20 injections to each patient); 2 patients had fever and chills. In order to determine the efficacy of parenteral administration of aminopeptide in 28 postoperative and 12 burn cases, determination was made of nitrogen balance, protein content of blood plasma, excretion of urea and amino nitrogen in the urine. The results of these experiments show that aminopeptide has no anaphylactogenic properties and is not toxic. Nitrogen, administered in this form, is readily assimilated by the organism, irrespective of the method of its introduction. It is possible to maintain nitrogen equilibrium and a positive balance if an adequate dose of aminopeptide is given. Clinical observations and laboratory examinations allow of the conclusion that aminopeptide is an effective preparation in parenteral protein nutrition in surgical patients and its recommendation for wide clinical use is warranted

YERMOLAYEV, V.R., kandidat meditsinskikh nauk

Modification of protein metabolism in some surgical patients with parenteral infusion [with summary in English, p. 157] Vest.khir. 77 no.6:12-17 Je '56. (MLRA 9:8)

1. Iz gospital'noy khirurgicheskoy kliniki (nach. prof. I.S. Kolesnikov, nauchn. rukovod. - prof. S.S.Girgolav) Voyenno-meditsinskoy ordena Lenina akademii im. S.M.Kirova. Leningrad, Botkinskaya ul., d.19, kv. 126.

(INFUSION, PARENTERAL,
protein hydrolysate in protein depletion in surg. (Rus))
(PROTEINS,
hydrolysates, parenteral infusion in protein depletion in surg. (Rus))
(SURGERY, OPERATIVE, complications,
protein depletion, ther., protein hydrolysate parenteral infusion (Rus))

YERMOLAYEV, V.R.

YERMOLAYEV, V.R., kand.med.nauk (Leningrad, 9, Botkinskaya ul., d.19, kv.126)

Thrombosis and embolism of the pulmonary artery following lung surgery [with summary in English]. Vest.khir. 79 no.9:55-62 S '57. (MIRA 10:11)

1. Iz gospital'noy khirurgicheskoy kliniki (nach. - prof. I.S. Kolesnikov) Voyenno-meditsinskoy ordena Lenina akademii im. S.M. Kirova.

(ARTERIES, PULMONARY, dis.
embolism & thrombosis after lung surg.)
(PNEUMONECTOMY, compl.
embolism & thrombosis of pulm. artery)

YERMOLAYEV, V.R., kand.med.nauk

Parenteral protein nutrition for surgical patients [with summary in English]. Khirurgiia 33 no.9:97-102 S '57. (MIRA 11:4)

1. Iz gospital'noy khirurgicheskoy kliniki (nach. - prof. I.S. Kolesnikov) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M.Kirova.

(PROTEINS, ther. use
pare burns & postop. care, parenteral admin.)
(BURNS, ther.
proteins, parenteral admin.)
(POSTOPERATIVE CARE
parenteral admin. of proteins)
(INFUSIONS, PARENTERAL
proteins, in burns & postop. care)

YERMOLAYEV, V.R., kand.med.nauk; SHATALOVA, N.A., kand.med.nauk

Chronic atelectasis of the middle lobe and lingula of the lung of varied etiology [with summary in English]. Vest.khir. 82 no.1:86-93 Ja '59. (MIRA 12:2)

1. Iz gospital'noy khirurgicheskoy kliniki (nach. - prof. I.S. Kolesnikov) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M. Kirova. Adres avtora: Leningrad, K-9, Botkinskaya ul., d.23, gospital'naya khirurgicheskaya klinika.
(ATELECTASIS, etiol. & pathogen.
chronic, of middle lobe & lingula (Rus))

YERMOLAYEV, V.R., mayor meditsinskoy sluzhby, kand.med.nauk

Healing of wounds containing a foreign body following total-body irradiation of animals. Voen.-med.zhur. no.4:88 Ap '60. (MIRA 14:1)

(WOUNDS) (RADIATION--PHYSIOLOGICAL EFFECT)

YEMOLAYEV, V.R., kand.med.nauk

Avulsion of the main bronchus in blunt trauma of the thorax. Khirurgiia 37 no.1:93-17 Ja '61. (MIRA 14:2)

1. Iz gospital'noy khirurgicheskoy kliniki (nav. - prof. I.S. Kolesnikov) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M. Kirova.
(CHEST--WOUNDS AND INJURIES) (BRONCHI--WOUNDS AND INJURIES)

GREBENNIKOVA, A. T., kand. med. nauk; YERMOLAYEV, V. R., kand. med. nauk

Acute gastric obstruction caused by complete relaxation of the left half of the diaphragm with transposition of the stomach, spleen and left lobe of the liver into the thoracic cavity. Khirurgiia 37 no.7:87-90 Jl '61. (MIRA 15:4)

1. Iz kliniki gospital'noy khirurgii No. 1 (nach. - prof. I. S. Kolesnikov) Voyenno-meditsinskoy ordena Lenina akademii imeni S. M. Kirova.

(DIAPHRAGM--DISEASES) (STOMACH) (LIVER) (SPLEEN)

YERMOLAYEV, V.R. (Leningrad, K-9, ul. Smirnova, d. 10-a, kv.22)

Surgical treatment of late Bronchoesophageal fistulae. Grudn. khir. 4 no.5:111-113 S-O'62 (MIRA 17:3)

1. Iz kliniki gospital'noy khirurgii No.1 (nachal'nik - prof. I.S. Kc"esnikov) Voyenno-meditsinskoy ordena Lenina akademii imeni Kirova.

YERMOLAYEV, V.R. (Leningrad, ul. Smirnova d.10-a, kv.22)

Intrapleural hemorrhages following radical pulmonary surgery. Grud.khir. no.4:76-82 Jl-Ag '62. (MIRA 15:10)

1. Iz kliniki gospital'noy khirurgii No. 4 (nach. - prof. I.S. Kolesnikov) Voyenno meditsinskoy ordena Lenina akademii imeni S.M. Kirova.

(LUNGS--SURGERY)
(HEMORRHAGE)

YERMOLAYEV, V.R., kand.med.nauk (Leningrad, K-9, ul. Smirnova, d.10a, kv.22)

Late results of the surgical treatment of bronchiectasis. Klin. khir. no.11:22-28 N '62. (MIRA 16:2)

1. Kafedra gospital'noy khirurgii (nach. - laureat Leninskoy premii prof. I.S. Kolesnikov) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M. Kirova.
(BRONCHIECTASIS)

YERMOLAYEV, V.R. (Leningrad K-9, ul. Smirnova, d. 10a, kv.22)

Segmental and combined resect'ons of the lungs in bronchiectasis. Grud.khir. 4 no.6:59-66 N-D'62. (MIRA 16:10))

1. Iz kliniki gospital'noy khirutgii No.1(nachal'nik -prof. I.S.Kolesnikov) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M.Kirova.
(BRONCHI—DISEASES) (LUNGS—SURGERY)

YERMOLAYEV, V.R., kand. med. nauk

Primary failure of the bronchial stump and the pulmonary wound following radical operations on the lungs. Khirurgiia 38 no.12:14-19 D '62. (MIRA 17:6)

1. Iz gospital'noy khirurgicheskoy kliniki No.1 (nachal'nik - prof. I.S. Kolesnikov) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M. Kirova.

KOLESNIKOV, I.S., prof.; PUTOV, N.V., prof.; YERMOLAYEV, V.R., kand.med. nauk; SOKOLOV, S.N., kand.med.nauk

Acute blood circulation disorders in the residual lung part following patrial resections. Vest.khir.90 no.2:128-135 F'63. (MIRA 16:7)

1. Iz gospital'noy khirurgicheskoy kliniki (nachal'nik prof. I.S.Kolesnikov) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M.Kirova. Adres avtorov: Leningrad, Botkinskaya ul., d.23, Gospital'naya khirurgicheskaya klinika Voyenno-medistinskoy ordena Lenina akademii imeni Kirova.

(LUNGS—SURGERY)
(BLOOD—CIRCULATION, DISORDERS OF)

YERMOLAYEV, V.R., kand.med.nauk (Leningrad, K-9, ul. Smirnova, d.10-a, kv.22)

Resection of the lungs in bilateral bronchiectasis. Vest. khir. 90 no.3:11-19 Mr '63. (MIRA 16:10)

1. Iz 1-y gospital'noy khirurgicheskoy kliniki (nachal'nik prof. I.S.Kolesnikov) Voyenno-meditsinskoy ordena Lenina akademii imeni Kirova.
(LUNGS—SURGERY) (BRONCHIECTASIS)

YERMOLAYEV, V.R., dotsent (Leningrad, ul. Smirnova, d.10-a, kv.22)

Some characteristics of the technique of lung resection in bronchiectasis. Vest. khir. 91 no.9:25-29 S'63. (MIRA 17:4)

1. Iz gospital'noy khirurgicheskoy kliniki (nachal'nik - prof. I.S. Kolesnikov) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M. Kirova.

KOLESNIKOV, I.S.; ORDZHONIKIDZE, G.K.; SHELYAKHOVSKIY, M.V.; YERMOLAYEV, V.R.
YAKUBOVSKIY, F.I.

Adenoma of the bronchi, their complications and operative treatment. Grud. khir. 5 no.6:101-106 N-D'63 (MIRA 17:2)

1. Iz kliniki gospital'noy khirurgii (nachal'nik - prof. I.S. Kolesnikov) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M.Kirova. Adres avtorov: Leningrad K-9, Botkinskaya ul., d.23. Klinika gospital'noy khirurgii Voyenno-meditsinskoy ordena Lenina akademii imeni S.M. Kirova.